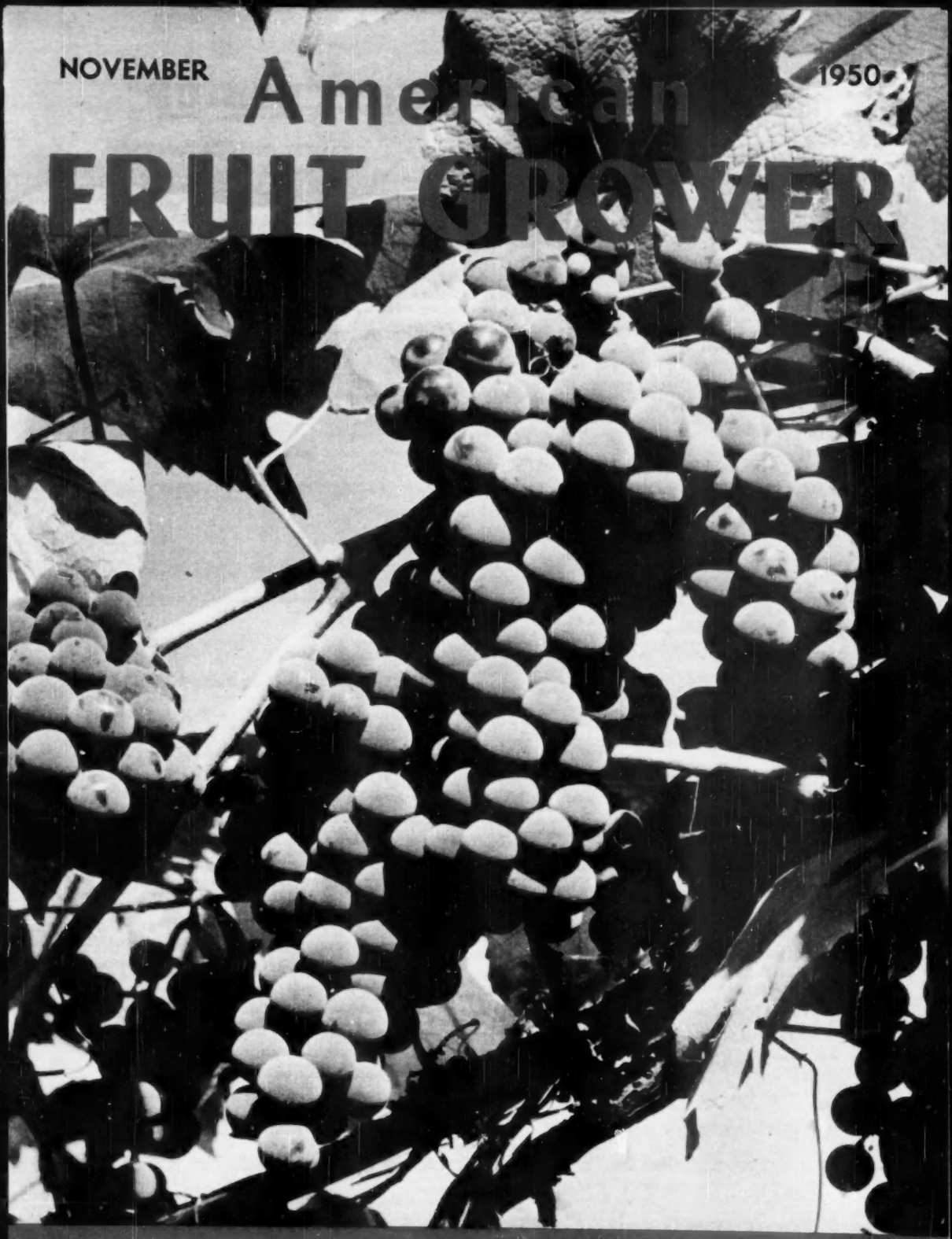
NOVEMBER 1950

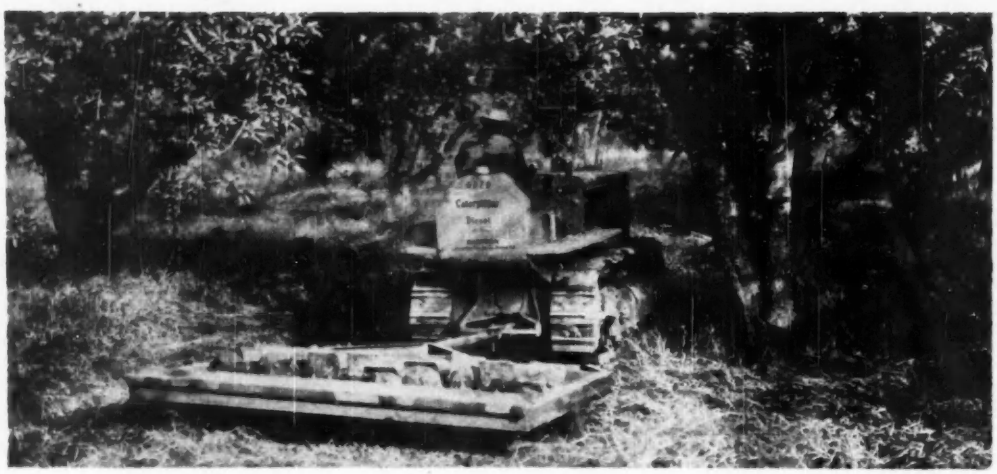
American FRUIT GROWER



A NEW LOW-COST PACKING HOUSE

DIESEL D2 DOES NOT "DEN-UP"

...Welcomes All-Winter Duty!



This "Caterpillar" Diesel D2 Tractor pulls a heavy rotary-blade tool, preparing an orchard of Matson Fruit Co., Selah, Washington, for winter.

The implement chops and mixes surface growth with soil to help prevent erosion, reduce the fire hazard, and fit the soil to admit storm water readily. On only 12 gallons of non-premium fuel, their D2 works 20 acres, per 8-hour day.

Winterize your D2—don mittens and sheepskin as cold weather comes, and keep going. This mid-October job serves notice that the D2 is not the hibernating type!

The "Caterpillar" Diesel Tractor's starting system is built to function positively even when outdoor temperature nose-dives, deep below zero. This system conditions the Diesel engine to operate; contributes to long life and low upkeep.

This tractor with all-weather, all-winter traction can grub-out unwanted trees; help prune; apply dormant spray; plow snow from roads and lanes; multiply manpower efficiency, wherever asked. For fruit-grower or field-cropper, "Caterpillar" Diesel Power gets the big jobs well-done on time; does profitable off-season tasks anytime! . . . Ask your "Caterpillar" Dealer soon about the delivery situation on the tractor size you need. Anticipate next year's power needs now.

Caterpillar Tractor Co., Peoria, Illinois

CATERPILLAR

REG. U. S. PAT. OFF.

Diesel Farm Tractors

DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

NOVEMBER 1950
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AMERICAN FRUIT GROWER
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[PRINTED IN U.S.A.]

CUT YOUR GAS BILL 25%

The new Speed Sprayer will give you a 25% saving on your fuel bill — that means extra profit for you.

EASIER SERVICING

The engine compartment and other parts have been simplified and made roomier for easier, quicker servicing.

QUIETER OPERATION

Noise causes fatigue — makes you tired, but the new engine muffler and improved design of the '51 Speed Sprayer reduces noise to a minimum.

CONVENIENT, TROUBLE-FREE CONTROLS

Controls are simplified and are easier to operate and service, giving you better performance than ever.

POSITIVE MECHANICAL AGITATION

Nozzles don't clog with new mechanical agitation that efficiently keeps the spray material in solution.

TANK FILLS FASTER, EASIER

The filler screen on the '51 Speed Sprayer has 44% greater open area for faster filling, especially with heavy chemicals.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Nov. 2-3—Iowa State College annual student Horticulture Show, Ames.—Carl A. Totemeier, Jr., Publicity Chairman, Ames.

Nov. 2-3—Second Annual Aerial Dusting and Spraying Conference, Yakima. Sponsored by State Aeronautics Commission, the Institute of Agricultural Sciences of the State College of Washington, and the Washington State Department of Agriculture.—H. S. Telford, Assoc. Ent., State College of Washington, Pullman.

Nov. 8-9—Minnesota Fruit Growers Association annual meeting, in joint session with western Wisconsin fruit growers, Hotel Winona, Winona, Minn.—J. D. Winter, Sec'y, Mound, Minn.

Nov. 15-17—Iowa Fruit Growers' Association annual meeting, Iowa State College, Ames.—Wm. H. Collins, Sec'y, State House, Des Moines 19.

Nov. 27-29—Ohio Agricultural Experiment Station Annual Fruit School, Gourley Hall, Wooster.—C. W. Ellenwood, Assoc. Hort., Wooster.

Nov. 28-29—Montana Horticultural Society annual meeting, Hamilton.—R. O. Young, Sec'y, Missoula.

Nov. 30-Dec. 1—Oregon State Horticultural Society 65th annual meeting, Corvallis.—C. O. Rawlings, Sec'y, Corvallis.

Dec. 4-6—New Jersey State Horticultural Society 75th annual meeting, Atlantic City.—A. J. Farley, Sec'y, New Brunswick.

Dec. 4-7—Washington State Horticultural Association annual meeting and International Apple Packing Contest, Yakima.—John C. Snyder, Sec'y, Pullman.

Dec. 5-7—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—H. D. Hootman, Sec'y, East Lansing.

Dec. 6-7—Connecticut Pomological Society 60th annual meeting in connection with 75th anniversary of Connecticut Experiment Station, New Haven.—S. P. Hollister, Sec'y, Storrs.

Dec. 6-7—Tennessee State Horticultural Society annual meeting, Andrew Jackson Hotel, Nashville.—G. M. Bentley, Sec'y, Knoxville 16.

Dec. 7-8—Nut Growers Society of Oregon and Washington annual meeting, Salem, Ore.—C. O. Rawlings, Sec'y, Corvallis, Ore.

Dec. 8-9—Kansas State Horticultural Society annual meeting, Topeka.—H. L. Drake, Sec'y, Bethel.

Dec. 12-13—Peninsula Horticultural Society annual meeting, Legislative Hall, Dover, Del.—R. F. Stevens, Sec'y, Newark, Del.

Dec. 12-14—Illinois State Horticultural Society annual meeting, in joint session with annual meeting of Illinois Fruit Council, Springfield.—James N. Cummins, Sec'y, Dix.

Dec. 14-15—Arkansas State Horticultural Society annual meeting, Springdale.—Earl J. Allen, Sec'y, Fayetteville.

1951 Meetings

Jan. 4-5—Maryland State Horticultural Society 53rd annual meeting, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 5-6—Western Colorado Horticultural Society annual meeting, Mesa College Auditorium, Grand Junction.—W. H. McKellar, Sec'y, P.O. Box 487, Grand Junction.

Jan. 9-11—Massachusetts Fruit Growers' Association annual meeting, Sheraton Hotel, Worcester.—Wm. R. Cole, Sec'y, Amherst.

Jan. 12-13—Utah State Horticultural Society annual convention, Newhouse Hotel, Salt Lake City.—Clarence D. Ashton, Sec'y, Rt. 2, Box 315, Provo.

Jan. 15-17—Virginia State Horticultural Society 55th annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, Staunton.

Jan. 17-19 (tentative)—Indiana Horticultural Society annual meeting; place to be announced.—Ray Kieckle, Sec'y, West Lafayette.

Jan. 17-19—New York State Horticultural Society 96th annual meeting, Rochester.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 23-24—Maine State Pomological Society annual meeting, during Agricultural Trades Show, Jan. 23-25 (tentative).—R. N. Berry, Sec'y, Livermore Falls.

Jan. 24-26—New York State Horticultural Society eastern meeting, Kingston.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 25-26—Pennsylvania State Horticultural Association annual meeting, Harrisburg.—J. U. Ruef, Sec'y, State College.

Jan. 29-Feb. 3—New Jersey Farmers' Week, Trenton. Fruit meetings on Feb. 2.—Fred W. Jackson, Director, Department of Agriculture, Trenton 8.

Jan. 30-Feb. 1—New Hampshire Horticultural Society 57th annual meeting and Trade Show, George M. Putnam Hall, Univ. of New Hampshire, Durham.—D. R. Batchelder, Sec'y, Wilton.

Feb. 8-9—Idaho State Horticultural Society 56th annual meeting, Hotel Boise, Boise.—Anton S. Horn, Sec'y, State House, Boise.

Feb. 19-21—National Peach Council annual meeting, Chase Hotel, St. Louis.—M. J. Dorsey, Sec'y, 1502 S. Lincoln, Urbana, Ill.

Feb. 21-23—Ohio State Horticultural Society annual meeting, Netherlands Plaza Hotel, Cincinnati.—C. W. Ellenwood, Sec'y, Wooster.

LETTERS TO THE EDITOR

Statement of Belief

Following are a few paragraphs from a letter from one of Indiana's most interesting fruit growers. His "statement of beliefs," which follows, might be a useful goal for others.—Ed.

"We abhor waste. And the worst form of waste is the waste of natural resources, especially soil, for history shows that impoverishment, famine, and death invariably follow the continued exploitation of natural resources.

"We do not consider that we own this land. It belongs to posterity. We are just tenants here for a while. We have no moral right to take more from it than we can return. Hence, the firm conviction that any practice that depletes the fertility of the soil is wrong, and any practice that wastes the soil itself is an unforgivable sin against future generations.

"Coupled with these beliefs is the belief that the productive capacity of the soil is almost limitless and that properly cared for it can go on increasing indefinitely.

"All our orchard practices are conducted as near as we know how, or are able to do, in accordance with these beliefs."

Indiana — Ernest J. Downing

Good Fruit Prices

Dear Sirs:

We are having, from the grower's standpoint, one of the best seasons on both tree fruits and table grapes that we have had in many years. Our sales to date on approximately the same volume of fruit are running from $800 to $900 per car higher than last year.

Canners paid the peach growers $60 for their peaches. We averaged on the Early and Regular Elbertas that we shipped fresh between $75 and $80 per ton net to the grower. The canners opened up here in California on Bartlett pears at $74 a ton and closed at between $90 and $100.

These are really fantastic prices in spite of the very heavy production costs, and many of our growers who had good crops will have plenty of income tax to pay this year.

California — W.

Apple Ice Cream

Gentlemen:

When the New York Agricultural Experiment Station at Geneva first produced apple ice cream, it occurred to me that by using pasteurized cider and a very tasty apple pulp, such as Maidenblush, we could produce a superior ice cream of genuine apple flavor that would be popular. We have had remarkable success with this ice cream and I am enclosing a formula that will give you all the data needed:

Use 12 per cent ice cream mix, removing enough mix to make space for the following pure flavor blends—1⅓ pints of pasteurized apple cider, ⅞ pint Maidenblush applesauce pulp that has been heated for a sufficient time to 145°. Put the flavor blends in the freezer with the 2½ gallons of mix. After the mix has begun to thicken or stiffen slightly, whip and freeze until ready to package or store.

Muncie, Ind. — James E. Davis

J. C. Hening of the New York Agricultural Experiment Station, who helped develop apple ice cream, suggests using a larger percentage of apple in the ice cream than the amount recommended by Reader Davis. The flavor of well-ripened apples is one of the most delicate and pleasing of all fruit flavors and the greatest care must be taken so as not to lose the true apple taste.

Mr. Hening suggests using 24 per cent of McIntosh apple juice concentrate, which contains 49 per cent insoluble solids. A local ice cream company tested the consumer acceptability of this blend and the reaction was excellent.

At present the New York station is experimenting with the addition of small apple slices after the ice cream has been drawn from the freezer. Although this does not seem to affect the apple flavor, it produces a good psychological effect.—Ed.

Mildew On Raspberries

Gentlemen:

I am writing for advice and information regarding a disease, diagnosed as a mold, that has attacked our raspberries.

This first appeared last year on two or three bushes. The effect was a curling of the leaves, some of which assumed a rusty appearance, and a dwarfing of the berries. Most of them ripened but achieved only a third to a half of their normal size.

The bushes were planted with 12 feet between each bush, each way, and are cultivated both ways. Also, the bushes were allowed to expand too much so that each must contain some two dozen canes.

Bancroft, Mich. — Mrs. Hoyt Lyman

Reader Lyman's plants probably have mildew which has been known to seriously affect red raspberries, especially Latham. Mildew is erratic and may cause considerable trouble one year and disappear the next.

The difficulty is probably complicated by the fact that too many plants are growing on each hill. The number of canes should be reduced to five to eight per group and these groups should be planted on hills six feet by six feet. This will allow better air circulation and less chance for mold.

This matter of mold is causing real concern to berry growers from coast to coast, especially where processing is the outlet. Pure Food and Drug authorities are "cracking down," and only by a thorough spray program plus sanitation in containers and in every step in the packing plant can the inspection be passed.—Ed.

Outstanding Black Walnut

Dear Sir:

Sometime ago I saw a notice in your paper asking for correspondence with any one having an outstanding tree of American black walnut. I have a tree which, with a screw-type cracker, will turn out many entire meats, like an English walnut. I have taken out entire meats with only a hammer; halves are easy.

This tree blew over two years ago to about a 45° angle but it is still green and has some walnuts this year, although this is not a good walnut year locally. The row, of which this tree is one, was transplanted and I think the tap roots were damaged.

I will be very glad to have any one who is interested get in touch with me. I will save the walnuts as soon as they are ripe. There are a few seedlings under the tree.

McLouth, Kans. — C. R. Van Druff

COMING

2nd ANNUAL
FRUIT YEARBOOK

Varieties—Planting—Production—Markets
Methods and Organizations

Trees are the only plants which defy time. Anything else planted or raised on the farm is of short life and perhaps only of a season's duration. The time-defying characteristics of trees make fruit growing a long range venture in which decisions once made cannot be readily changed. To enable the grower to plan wisely for the future, AMERICAN FRUIT GROWER again presents in its January issue the statistical background of the great business of growing fruit.

The changing variety situation, the relation between fresh and processed fruits, and the economics of production and marketing all vitally affect orchard profits. Such basic data will enable the grower to more accurately gauge his own operation and guide him in planning for the future.

JANUARY ISSUE
American Fruit Grower

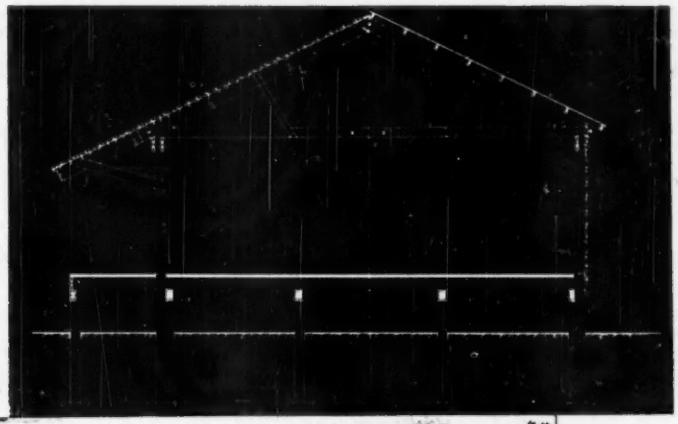
Build A POLE-TYPE PACKING HOUSE

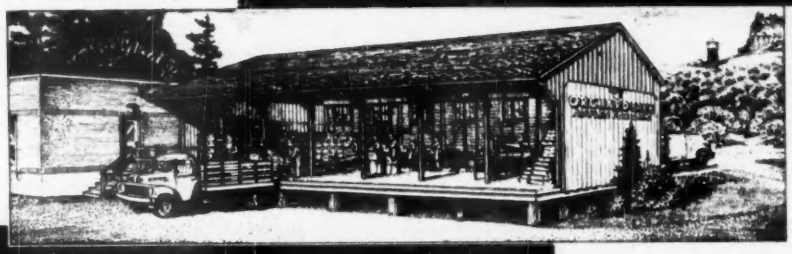
By S. A. WITZEL and F. S. MOULTON, *University of Wisconsin*

FRUIT GROWERS needing new or enlarged packing shed space will find in the pole-type packing shed shown here an economical, convenient, and substantial building.

Constructed of pressure-treated creosoted poles and ties which provide both foundation and framing for the large post-free shed that is 30 feet wide and 70 feet long with a roofed loading dock of another 6 feet, this shed provides 2,500 square feet of usable floor space. Other compounds available for wood preservation are pentachlorophenol and copperized CZC.

Growers estimate the daily working capacity of this packing shed at 500 boxes or baskets of apples. This allows the generous space of 5 square feet of floor space per bushel packed per day. In a six weeks packing period 15,000 bushels could be packed, and if refrigerated storage is available for storage as the fruit is picked so as to extend the packing season, the capacity for the season could reach 25,000 bushels. Enclosure panels can be set in along the open edge of the platform and heat provided if the packing season were to be extended into cold weather.





The line drawing illustrates the 30 x 70-foot pole-type packing shed with 6-foot loading and storage dock described in article. Section plan at top shows alternate roof coverings. At left is floor plan.

A complete set of working drawings of a low-cost pole-type packing house is available for $1.00. Write to Plans Dept., AMERICAN FRUIT GROWER, 1370 Ontario St., Cleveland 13, Ohio.

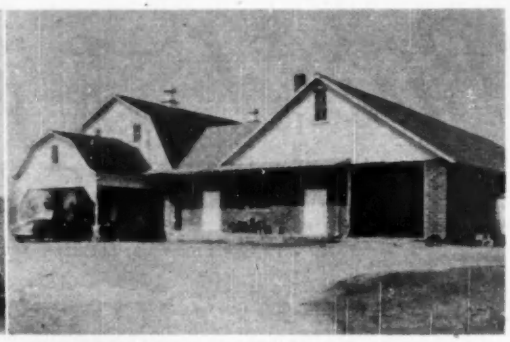
For packing in the warm autumn weather, the open packing shed is ideal for good working conditions. An elevated floor resting on creosoted railroad ties set deep into the ground for stability makes the work easy and the organization for the complete operation relatively simple.

Here one can arrange his packing equipment for the convenient flow of fruit, crates, and boxes or baskets. Roller conveyors transport the loaded crates to the grader as they come in from the orchard. Roller conveyors and dollies make the movement from packing row to storage or shipping truck possible with the least amount of effort and in the shortest possible time.

Locate the packing shed convenient

(*Continued on page 26*)

The elevated floor greatly facilitates the receiving and loading of fruit at this well-planned packing house.



An example of the type of facilities used by growers who store their apples "orchard-run" and pack them out later.

HOW EFFICIENT IS YOUR PACKING HOUSE?

Recent studies on packing house design can help you cut your grading and handling costs

By H. P. GASTON, *Michigan State College*

IN THE fruit growing business profits depend to a considerable extent upon how effectively the crop is sorted and packed.

The efficiency with which these services are performed is largely governed by the design of the packing house in which the work is done. Although no two houses ever are exactly the same, there are certain fundamental features of design that must be given careful consideration if packing operations are to be effective and economical.

Some recently completed studies indicate that in houses where apples, peaches, and pears are to be graded and packaged there should be available a minimum of three to four square feet of floor space for every bushel of fruit that is to be packed in any one 10-hour day.

In addition to sufficient enclosed space where actual grading and packing operations are usually performed, every packing house should have one or more covered sheds or loading docks. Such a shed affords considerable protection from both sun and rain, and adds usable space at minimum cost.

If a fruit packing plant is to operate with maximum efficiency, an adequate amount of floor space must not only be available but it must be unobstructed, readily accessible, and of suitable outline.

Most of the fruit that moves through packing houses arrives in trucks and goes out either in the same sort of vehicles or by rail. It was observed that fruit can be received and loaded out most rapidly and economically when the packing house floor and loading docks are at truck-bed height rather than at ground level.

At least two sides of the packing area should be readily accessible by truck. A convenient approach on three or even all four sides is even better.

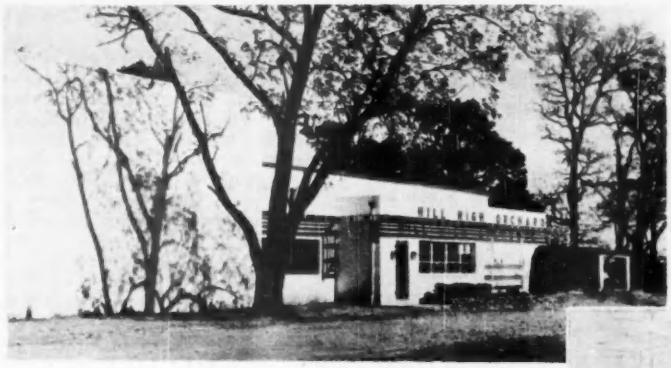
Interviews with qualified observers lead to the conclusion that first-floor refrigerated storage space is preferable to cold rooms located in the basement. Fruit can be moved into and out of first-floor storage on a roller conveyor. Relatively expensive elevators or power conveyors usually are needed if basement storages are to be properly serviced.

While most of those consulted said that a first-floor location immediately adjacent to the packing area is the

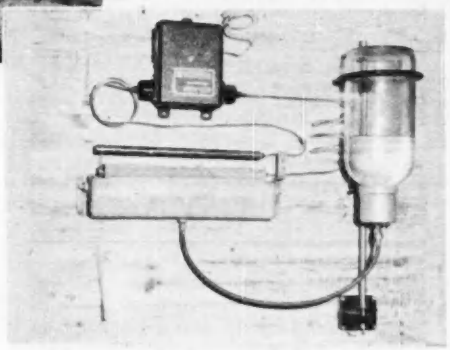
(*Continued on page 27*)

Ample shed space for storage of supplies helps the owner of this packing house to operate with greater efficiency.

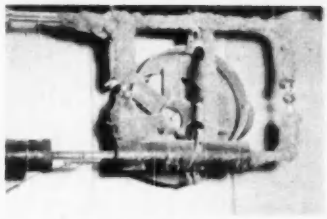
This well-designed fruit packing establishment has adjoining facilities for cold storage of fruits.



Storage, packing plant, and salesroom of Hill High Orchard in Virginia are housed in the attractive building shown at left.



Control mechanism used to maintain storage humidity between 85 and 90 per cent.



Humidifier in Hill High Orchard storage. Two nozzles inserted in exhaust from air purifier spray fine mist of water into air.

COLD STORAGE
WHERE YOU NEED IT

Virginia's Colonel Sleeter built a modern cold storage in 1947 and has received premium prices for his fruit ever since.

AS A fruit grower and business man you are interested in two things—sales volume and price. You are interested in selling as large a percentage of your crop as possible at the highest possible price. Perhaps you are one of the many fruit growers contemplating building a cold storage on your fruit farm in order to maintain better control of the marketing of your crop.

The peak apple harvest covers a period of about four weeks. The price of apples sold during those weeks is generally lower than prices two or three months later.

This is where storage enters into the picture to lengthen your market season and help you secure a higher price for the bulk of your crop. The same may hold true for pears or plums and even peaches but for shorter periods of storage time.

You want a storage plant that will keep your fruit in excellent condition for as long a period as possible—up to six or eight months for apples. For softer fruits it may be for only a few days or a few weeks, until the glut on the market is over.

You want your plant economically constructed and efficiently operated in order to keep overhead costs as low as possible.

Colonel and Mrs. Frank Sleeter had these ideas in mind when in 1947 they built a modern cold storage plant on their Hill High Orchard, Round Hill, Va. They streamlined it, putting in many modern devices to maintain accurate storage conditions and to save labor in fruit handling.

The exterior walls of their 36,000-bushel storage are of cinder block, painted white. Tongue-and-groove Celotex was used for the interior walls. For insulation, rock wool was blown into the six-inch space separating the two walls. Ten inches of rock wool and shavings insulate the ceiling. Floor construction consists of three feet of cinders well packed down, over which was poured six inches of reinforced concrete.

The storage is cooled by means of blower-type refrigeration units with two ceiling air ducts in each room, one at either side of the room. Using his engineering skill, Col. Sleeter installed a device in the central duct which automatically reverses the air flow from one ceiling duct to the other. Cold air is blown through one of the ceiling ducts for 15 minutes, then automatically reversed and forced through the other ceiling duct.

By thus reversing the air flow, fruit in all parts of the storage room is cooled more evenly and quickly. This is especially important when fruit is loaded into the storage immediately after picking and field heat must be removed quickly to check ripening.

Proper humidity in the storage is maintained by means of a control device which Col. Sleeter has connected to his air purifier system.

For the latter he uses activated carbon in a battery of metal canisters. The air in the storage, loaded with volatiles or fruit ripening gases, is pulled through the carbon and upon coming out as "pure air" from which the fruit ripening gases have been removed, is blown back into the storage room, thus imparting a longer storage life to the apples.

It is in the air stream from the purifier that Col. Sleeter installed two nozzles that spray a fine mist of water out into the storage. This is his humidifier, a simple, inexpensive device. It is automatically controlled at the opposite end of the room. The device turns on the nozzles when room humidity goes below 85 per cent and turns them off when it reaches 90 per cent.

Col. and Mrs. Sleeter feel that these three improvements—reversed air flow, controlled humidity, and purified storage atmosphere—have increased the storage life of their apples from six to eight weeks.

This is of tremendous value since their selling program consists primarily of fancy apples to select trade.

(*Continued on page* 10)

Fruits are stored to prolong their life and hence their utility. Long ago is was discovered that fruits kept at low temperatures and high relative humidity "live" much longer than those held at high temperatures and low humidity. Since then scientists and fruit growers have combined their efforts to work out practical means of perfecting facilities and conditions of cold storage at the orchard. Much progress has been made; much more progress will be made in the future. Growers and consumers are profiting accordingly.

COLD STORAGE WHERE YOU NEED IT

(*Continued from page 9*)

Proper storage of the apples keeps them in fancy condition for late season sales at premium prices. During the 1949-50 marketing season the Sleeters received up to $4 per bushel when other growers were getting only half that much.

Short Storage and Precooling

Besides lengthening the marketing season, the fruit grower with cold storage facilities can precool such soft fruits as peaches and berries. If he has been growing apples only, his cold storage may be an incentive for him to diversify his plantings in order to utilize his storage facilities to the utmost.

The Sleeters kept this idea in mind when they built their storage plant. They divided their storage into two rooms of 24,000 and 12,000 bushels capacity, respectively. The smaller room is used during peach harvest to precool peaches and to hold them for short periods until the market will absorb them.

Stanley Fulton and R. S. Dillon, Jr., both large-scale fruit growers near Hancock, Md., use their large storage plants in the same manner as do the Sleeters. One day last August Mr. Fulton received an order for three cars of Elberta peaches from a distant buyer. On the same day the peaches were picked, packed, and rolled into the cooler at 32°F., where they remained for about 10 hours before being loaded into the car. Two days later the peaches were on the market in a distant city in excellent condition.

Strawberry growers are finding the same precooling and short-storage advantages in their cold storage plants. Many times it means the difference between profit and loss on a day's picking.

Growers who have roadside stands or sell retail at their orchards find a cold storage plant a necessity. The Eckerts of Belleville, Ill., are convinced it is their fruit farm cold storage that keeps their large roadside market in operation over a long season and makes their fruit business a real success.

Prepacking from Storage

Growers who are prepacking fruits in consumer units will tell you it is impossible to prepack without your own cold storage facilities. Prepackaged apples must be of the finest quality if they are to hold up in retail stores and create demand. Apples cooled immediately after picking and held at proper storage temperatures will meet such qualifications.

You can realize the necessity for getting fruit into storage directly from the orchard when you know that apples held at 70° will ripen as much in one day as they would at 30° in 10 days. Thus a delay of three days between picking and storage can shorten the life of stored apples as much as a month.

During the winter months as demand develops for prepackaged apples the grower with storage facilities can grade them out of storage and pack them in prime condition. Another major advantage of the fruit farm storage is that it enables the grower to utilize much of his harvest labor in the packing house during the winter months.

More Money in the Grower's Pocket

Recently Prof. G. P. Scoville of Cornell University completed a study of grower-owned apple storages in New York state. The results of his work show that apples from grower-owned storages in most cases sell for higher prices than apples from commercial storages. The accompanying table gives the results of a survey by Prof. Scoville on the amount and prices received for apples packed as they go into storage and as they come out of storage.

Modified air storage has contributed to higher net returns for apples thus stored, especially the McIntosh variety. Prof. Scoville in his report gives evidence that growers sold McIntosh apples from modified air storage in the Hudson Valley in 1947 for as much as 53 cents more per bushel than those from ordinary cold storage. In 1948 apples from modified air storage sold for as much as $1.35 more per bushel than McIntosh kept in regular cold storage.

Apples and other fruits must be stored at low cost. To do this, storages must be built as economically as possible, the space utilized as efficiently and as long as possible, and storage conditions maintained as ideal as possible.

NET RETURN PER BUSHEL FOR APPLES GRADED IN AND OUT OF GROWERS' AND HIRED STORAGES
Hudson Valley, 1947, 1948; Niagara County, 1947

	Bushels of apples graded as they went		Net return per bushel when graded as they went	
	Into storage	Out of storage	Into storage	Out of storage
McIntosh				
Hudson Valley, 1947				
Growers' apples in own storage	45,638	73,090	$1.34	$1.59
Storage hired by grower	27,461	24,132	1.05	1.47
Modified air storage	610	11,430*	1.79	2.02*
Hudson Valley, 1948				
Growers' apples in own storage	34,710	35,758	1.81	1.88
Storage hired by grower	22,038	5,508	1.68	2.37
Modified air storage	6,094	5,937	2.44	3.94
Niagara County, 1947				
Growers' apples in own storage	1,021	14,935	1.85	2.07
Storage hired by grower	6,065	22,915	1.13	1.55
Other Varieties				
Hudson Valley, 1947				
Growers' apples in own storage	74,445	82,275	1.22	1.31
Storage hired by grower	22,071	15,252	1.28	1.24
Hudson Valley, 1948				
Growers' apples in own storage	53,314	43,694	1.76	1.88
Storage hired by grower	26,787	639	1.91	2.79
Niagara County, 1947				
Growers' apples in own storage	6,801	34,858	1.05	1.51
Storage hired by grower	38,575	61,165	0.90	0.98

*Included are 1,433 bushels that were damaged by improper operation of gas chamber and were disposed of at an average net return of 82 cents per bushel. If these were not included, the average price for modified air McIntosh would be $2.18.

They *Freeze* 'em AT THE ORCHARD

Enterprising growers are using quick freeze to preserve surplus fruits and create new markets

By ELDON S. BANTA

RICHLY FLAVORED, well-ripened fruits when properly prepared become one of the most delightful and healthful frozen foods. No one is in a better position to verify this than the fruit grower himself. In fact, he can do himself a good turn by promoting the preservation of fruits by freezing.

Quality control is of extreme importance in food freezing. The grower of fruits is in a fortunate position for he can control the quality of his product by picking at the peak of ripeness and preparing it quickly, thus reducing the chances for deterioration before freezing. Few items drop in sales volume so quickly as a poor quality frozen product.

It costs no more, and probably less, to start a small frozen fruit business on a fruit farm than to venture into any other type of fruit preservation. This is partially due to the fact that most fruit growers already have an investment in refrigeration equipment for storing fresh fruit. A small addition to original investment will provide adequate freezing space for a portion of their crop which in turn may reduce their losses of good fresh fruit.

For example, Bernard and Clyde Mumma of Dayton, Ohio, built a quick-freezing room in a corner of their cold storage when they remodeled their plant a few years ago. The room is 20 x 20 feet and 10 feet high and the temperature is held at zero. They freeze raspberries and apple cider and later may also freeze sour cherries.

The Mummas grow about 75 acres of raspberries and when the fresh market does not consume all of a day's picking they put the excess in the freezing room and later sell it to a commercial processor. Thus berry losses are reduced to a minimum.

Cider is frozen in gallon jugs and sold direct to consumers at the salesroom. In this way they can sell fresh cider almost the year round. It means fewer apples go to waste.

Berry and peach growers are in excellent position to develop home freezing of their products. Generally a quantity of these fruits become

(*Continued on page* 12)

Nancy Lee Muckley, daughter of apple grower Paul Muckley, Waynesburg, Ohio, is shown in top photo drawing a cup of ice-cold cider from the 50-gallon refrigerated box, which is an important piece of equipment in Muckley's movable roadside stand, illustrated above. Muckley freezes 250 barrels of cider every fall.

A large home freezing unit such as illustrated at left is ideal for the grower's salesroom or roadside stand, to demonstrate to customers the proper way to freeze and store fruit and fruit products.

The drawing of the two-compartment walk-in refrigerator shown above was developed by the Virginia Agricultural Experiment Station, Blacksburg. One room is for chilling and short-time storage, the other for freezing and storing frozen foods.

THEY FREEZE 'EM AT THE ORCHARD

(*Continued from page* 11)

too ripe before harvesting to permit grading and packing for the fresh fruit market but so long as they are not overripe, they make the finest fruits for the home freezer.

Norman Plass of Owensville, Ind., grows a lot of peaches, mostly the Elberta variety. Last year he sold over 18,000 bushels. Half or more of his sales are made right at the farm. At harvesttime he tells folks in Evansville and surrounding areas that they ought to buy his peaches, especially for freezing purposes. He does this advertising by radio three to five times a day during the harvest period. Norman estimates that more than half of his peaches are now going into home freezers.

To help promote this idea, each customer at the Plass Farm receives a mimeographed sheet giving directions for preparing and freezing peaches. This practice, Norman says, has paid for itself in increased sales.

Looking ahead to the day when an even greater percentage of his peaches will be going into the freezer, Norman Plass has nine acres of the Redhaven variety which next year should produce their first full crop. This variety is especially adapted to freezing because of its non-browning quality.

Growers should not overlook the value of having a good home freezing unit right in their salesroom or roadside market. Filled with the various fruits or fruit products frozen on the farm, this offers an excellent opportunity to demonstrate to customers the type of containers required for quick freezing and the proper way to store foods in the freezer.

Frozen Apple Cider

Numerous products made from fruits are adapted to freezing. Paul Muckley of Waynesburg, Ohio, for example, freezes over 10,000 gallons of fresh apple cider every year. The cider is made from sound apples, which are carefully strained after pressing but not filtered, put in 50-gallon barrels and frozen at 0° F.

Paul makes his cider in the fall and early winter months when the best varieties are available from his 50-acre orchard. The blend of good varieties is important. Stayman is one of his best cider varieties, although he uses quantities of Grimes Golden, Jonathan, Golden Delicious, and Rome Beauty.

The barrels of cider are frozen and stored in a commercial storage a short distance from the farm. A day or two has to be allowed for a barrel to thaw and be ready for use.

There is a trick to thawing. Most of the ice in the barrel should be melted before any cider is drawn off for use. The sugars and solids melt first and the water last. Consequently, if the barrel is still half frozen when the cider is drained off, the juice will be somewhat concentrated and much sweeter than that which will come off later as the ice melts.

When most of the ice is melted, the barrel is rolled into a cool room until the cider is ready to be sold. The temperature is held a little above freezing.

Year-Round Cider Sales

Muckley's frozen apple cider has a wide market in Ohio. Paul has been building up sales for 10 years. About 1940 he started selling cider at county fairs and at the Ohio State Fair.

But fair time comes before the best cider-making time. In order to have cider for the fairs, he would have to make it almost a year in advance and store it. He finally concluded that freezing the fresh cider with no preservative would be the best method of keeping it until the next year.

Eighteen barrels of cider were frozen the first fall. At fair time the following year it sold like hot cakes. Paul now rolls into 0° F. storage some 250 barrels of cider every fall.

At the county fairs, the cider is sold by the cup for a nickel or a dime or a gallon for 75 cents, the same as at his orchard roadside stand.

Frozen Fruit Gel

A new frozen fruit product, which shows promise of becoming very popular, is being packed in a few instances in various sections of the country. It is a frozen gel and resembles jam or jelly, for which it makes a good substitute. The main difference between frozen fruit gel and jelly is that no heat is applied to the product; consequently none of the volatile flavors are lost from the fruit. The process was developed at the USDA's Western Regional Research Laboratory, Albany, Calif.

P. E. Yates of Puyallup, Wash., has adapted the process for making his brand of "Frozenspread" on his own berry farm. The product after partial thawing can be held in a household refrigerator at about 40° for at least three weeks. At room temperature, it can be held for at least a week before it starts to break down.

Having their freezing plant close to the berry fields gives the Yateses a chance to control the quality and maturity of the fruit used for the spread. Berries are harvested at their prime and immediately prepared and frozen. At present they are making their spread from raspberries, blackberries, Boysenberries, and two combinations of these berries.

The Yates process begins with fresh or frozen unsugared berries which have been completely thawed. The first step is to puree the berries in a stainless steel extractor which removes the seeds. For further processing, the puree is divided into three proportions, as given below, and sugar and pectin added in precise manner. It takes skill in the formulation of this product to insure high quality.

The Yates formula for Frozenspread is as follows:

FROZENSPREAD FORMULA

100 lbs. puree (10 per cent soluble solids, pH 3.0) divided and handled as follows:

9 lbs. puree
Add to this 0.9 lb. pectin and 9.0 lbs. sugar. Mix sugar and pectin, then stir with puree until pectin is wetted. Stir 20-30 minutes.

51 lbs. puree
Add no pectin or sugar to this.

40 lbs. puree
Add to this 97.9 lbs. sugar. Stir until most of sugar has dissolved.

Combine the three batches. Stir until sugar has dissolved. Package, let stand 24 hours at 70°-75° F. to bring about proper gelling. Freeze and store at 0° F. or less.

Yates is using a 12-ounce glassine-lined cup to package his product.

Frozen Apple Slices

Kenneth and Ralph Varian, East Canton, Ohio, growers of quality apples, decided a few years ago that frozen apple slices would make a good side line to their fruit business. Along with their freezing unit, they installed a small locker plant to help pay overhead and operating expenses. In 1949, they froze as slices some 3,000 bushels of Jonathan, Grimes Golden, Golden Delicious, Rome Beauty, Northern Spy, and Stayman.

The Varian process is not complicated but must be done carefully to insure a quality product. An apple two and one-half inches in diameter is preferred. The fruit is peeled, cored, and sliced by machine and then run through a surfur dioxide bath for two minutes. This prevents browning of the slices. The bath is made by adding 20 ounces of sodium bisulfite to 35 gallons of water. To maintain proper concentration of sulfur dioxide, eight ounces of sodium bisulfite are added after every 20 cans of slices have been run through. Each can holds 30 pounds of slices.

The tins of slices are loaded into the freezing room and frozen at 0° F. Any increase in demand will be easily taken care of for the Varians have ample facilities for expanding. The market is largely to pie bakers.

AN OLD-FASHIONED APPLE BUTTER STIR

By WILLIAM T. KONG

A bit of our forefathers' day is transplanted into our modern times with this annual event held by the Patterson Bains of McBaine, Mo.

Apple butter stirs always mean fun for the guests of the Patterson Bains.

PUT 500 people in an apple orchard on a Sunday in October and what have you got? An old-fashioned apple butter stir and a lot of fun.

Particularly at the Patterson Bain's Riverview Lodge at McBaine, Mo., has the apple butter stir become a popular social event. For more than 20 years, thousands have flocked to Riverview to "stir the kettle and press the cider."

McBaine is a small, isolated country town. The nearest city of any consequence is Columbia, nine miles away. When the war began, gasoline and sugar rationing forced the Bains to cancel the event. But Missourians who love an apple butter stir refused to let it die. In 1944, stirrers saved enough gasoline to make the trip to Riverview and gave the Bains enough sugar with which to make apple butter. The stir has continued ever since.

As one regular participant remarked, "I brought my whole family over here to eat apples and make apple butter and we're going to come for the next 100 years."

It all began when Pat Bain was a boy in St. Louis County. The Bains had a huge apple crop one year and the boys learned how to make apple butter from their German maid. Pat went off to war in 1917, but the first thing he and his brother did when they were discharged was to buy a $15 30-gallon kettle at a sale for the sole purpose of cooking apple butter.

Patterson Bain met Marjorie Jones when he was a freshman at the University of Missouri at Columbia. Although only six years his junior, Marjorie then was in the first grade. It wasn't Marjorie's fault that she was the grandma of her class. Her scholarly father, J. C. Jones, frequently studied abroad and took his entire family with him on those occasions.

Marjorie lived in Germany three different times and even celebrated her first birthday on the Atlantic Ocean. While her father studied at Leipzig, she attended German schools. The Joneses also lived in Siam for a year before settling down in Missouri.

So, when Marjorie entered an American school, she was placed in the first grade because she couldn't speak English. But Marjorie claims, "I eventually got through school at the average age."

The Bains and the Joneses were old family friends and Pat and Marjorie soon fell in love. On March 5, 1921, they were married. He had received a civil engineering degree from Missouri and had studied at Cornell University. But when he married Marjorie Jones, Pat forsook an engineering career to become an apple grower and a son-in-law of a University of Missouri president.

Pat and his wife moved to McBaine where Dr. Jones had planted an orchard in 1904. A few years later the Bains invited a few friends to a cider-fest. The event grew bigger and bigger and in the mid 1930's when the cider-fest was one of the more popular events in Boone County, the Bains turned it into an apple butter stir, using a recipe handed down from Pat's mother.

Preparation begins the night before the stir when a small group gathers at Riverview Lodge to peel and quarter four bushels of apples. Each peeler brings his own implement and apron. Gossip flows freely as the peeling becomes fast and furious. The peelers eat apples between sentences. Dr. Fred McKinney, chairman of the University of Missouri psychology department, admits, "I eat almost as many apples as I peel." If he really does, he is an exception.

Early the next morning the old copper kettle is dragged into the fruit-laden orchard. Six gallons of cider are poured into the cauldron and when the cider boils down to half, the apples are added. At no time during the cooking is water used, thus keeping the apple flavor as concentrated as possible.

Guests do the stirring and the colder the weather, the more anxious they are to take their turns with the paddle. The paddle conveniently is attached perpendicularly to a five-foot pole, thus sparing stirrers from heat and smoke. Apple butter can be cooked in eight hours but it never is completed until the guests have left. Pat Bain explains, "We don't want to overwork the guests."

At the last minute, sugar, cloves, cinnamon, mace, and nutmeg are added. The finished product is not sold but is given to those who helped peel apples.

While the butter is on the fire, guests busy themselves eating whole apples from Riverview Orchard. The orchard consists of 240 acres, in six tracts of land. Apples are hauled to McBaine where the Bains have a huge packing plant. Peaches, cherries,

(*Continued on page 20*)

State NEWS

- **Death Claims Dr. Hansen, Noted Great Plains Plant Breeder**
- **Connecticut Station Celebrates 75th Anniversary**

NEW YORK—Approximately a half million dollars was distributed to more than 200 fruit growers at the 15th annual meeting of Westfield Planters Co-operative Fruit Producers, Inc, held recently at Westfield.

Net sales of the 1949 crop products amounted to $1,170,403.66, according to the annual report. Grapes netted $124.12 per ton; tomatoes, $44.02 for No. 1 and $26.41 for No. 2; sour cherries, $163.98; juice cherries, $142.87; Morello cherries, $238.27; currants, $153.57.

The stockholders voted to mortgage their property for $150,000 to complete the construction of a cold storage building and tank which when completed will hold 750,000 gallons of juice. The 100 x 100-foot building to be completed this fall is constructed of cement block. Insulation will consist of six inches of cork and five inches of water on the roof.—*George E. Toles.*

CONNECTICUT—Top-ranking scientific associations and agricultural research institutions, including the Rothamsted Experiment Station of England, oldest agricultural experiment station in the world, saluted the Connecticut Agricultural Experiment Station on the occasion of its 75th birthday on September 29. The Connecticut station is the oldest institution of its kind in America.

A bronze tablet, presented by residents of the state and unveiled during the two-day official observance of the anniversary, will serve to commemorate the site of the station. The tablet is to be set in native Connecticut granite obtained from the farm of Norbert Kneur of Guilford, prominent Connecticut fruit grower.

The scientific research activities of the station were demonstrated during the celebration. One of the smallest instruments in use by the station is the microinjector, used for studying the effects of various insecticides on insects. The instrument consists of an ordinary hypodermic needle and a micrometer which permits the injection of minute amounts of a test chemical into an insect's body.

WASHINGTON—A "floor" price of $85 a ton was recently set by the Welch Grape Juice Company for 1950 Concord grapes. This is the highest price ever paid for Concords in the state.

The company recently completed the expansion of its processing facilities at Grandview, at a cost of $125,000. The enlarged plant will make it possible to process 6,000 tons of Concords annually.

William Herbert Waite, 52, orchardist in the Manson area for the past 30 years, died recently.

FLORIDA—The recent 17th Annual Citrus Growers Institute at pine-bordered Camp McQuarrie in Ocala National Forest was, by long odds, the most interesting and successful in the history of this yearly get-together of Florida growers, research men, and specialists. More than 500 attended the four-day institute, and 400 or more of these were growers.

Optimism prevailed throughout the institute. The good 1949-50 season, marked by the highest prices ever paid for citrus, the promise that growers see in citrus concentrates, the fact that growers have an efficiently functioning organization in Florida Citrus Mutual, the State Citrus Code, more orderly marketing in 1949-50 than in many years, and the prospect of a 100-million-box crop for 1950-51 were major factors contributing to the air of optimism and confidence among growers and others.

As in past years the institute was directed by the Florida Agricultural Extension Service, who owns and operates Camp McQuarrie, and held in co-operation with the Florida Agricultural Experiment Stations, State Department of Agriculture, USDA, State Marketing Bureau, Florida Citrus Production Credit Association, and the Florida Farm Bureau.

District Agent K. S. McMullen of the Extension Service was director of the institute, and Lake County Agent R. E. Norris was institute manager.

Harvey Henderson, 51, extensive citrus grower of Winter Haven and founder of several packing firms, died recently. Henderson was a member of the Florida Citrus Commission for several years and served as its advertising committee chairman for most of his tenure.—*Clyde Beale, Assoc. Ext. Edr., Gainesville.*

MICHIGAN—A very favorable growing season has resulted in an apple crop of excellent quality. Although apple scab started to show up on the leaves in early June in many orchards, the fruit crop throughout the state is relatively free of secondary scab infection. Continued protection of the fruit during the rainy periods of July and August where scab was present on the leaves is the reason for the clean fruit.

Brown rot was hard to find in peach orchards. This was due in part to the conscientious effort of the growers in combating this pest and also to weather conditions which were favorable for brown rot control.

Continued activity of the red-banded leaf roller during September and early October necessitated late applications of Rhothane or TDE to prevent extensive damage to the fruit.

Concentrate sprays for pest control are gaining favor. Grower Duncan in Monroe County, Growers Nelson, Taylor, and Jenkins in Jackson County, and Grower Pierson in Ionia County express great satisfaction with their results this past season using concentrate sprays. They used 4X and 5X concentrations for all applications and at no time did they find it necessary to revert to dilute applications.—*Arthur E. Mitchell, East Lansing.*

ILLINOIS—Thomas S. Smith, 80, widely known as The Apple King, died recently. Mr. Smith pioneered in the wholesale fruit and produce business in Chicago in 1900, establishing the firm of Thomas S. Smith &

When John McKeen, sturdy Finnish farmer, bought the old West Paris, Maine, farm which the Yankees could not handle with Baldwin apples native to the clime, McKeen said he would set out a crop of peaches. Neighbors laughed, said it couldn't be done. Now the Finn laughs, as he gets ready for market his 1,000 bushels of luscious red-ripe peaches.—*Harry A. Packard.*

Sons, Inc. Early in the century he also started to grow apples, setting out orchards in Michigan and, later, in southern Illinois.

NEW JERSEY—The first of several meetings planned to commemorate the 75th anniversary of the founding of the New Jersey State Horticultural Society was recently attended by a group of New Jersey fruit growers assembled at Rutgers University.

The meeting was held in the same room of Geological Hall where the society was organized in 1875. A review of the activities of the society was presented by Prof. A. J. Farley, secretary since 1926, and Lewis W. Barton, present president.

Dr. Niels Ebbesen Hansen, often called the Burbank of the Great Plains, died October 5 at Brookings, S.D., where since 1895 he had taught at the South Dakota State College and conducted experiments with hybrid fruits.

Dr. Hansen was born in Ribe, Denmark, in 1866, and emigrated to this country when a youth. His explorations for hardy commercial varieties of fruits and alfalfas, grains, and grasses which could be adapted to this country took him to eastern Europe and Siberia where he found a rigorous climate similar to that of his adopted midwestern home in South Dakota.

Among Dr. Hansen's most valuable horticultural contributions are the Opata and Waneta plum hybrids. The Waneta, a cross between a sand cherry and a plum, is the hardiest and largest of his plum introductions. The Opata is a cross between a sand cherry and a gold plum and yields a rounded fruit one to one and one-half inches in diameter with luscious green flesh.

In the cherry field, the Oka is outstanding for its purple-colored fruit of excellent quality. The Sioux cherry is big and hardy. His two crabapple hybrids, the Dolgo and the Hopa, are popular.

Dr. Hansen has been widely honored by foreign as well as U.S. horticulturists for his great work in selecting and breeding hardy varieties. The American Pomological Society awarded the Wilder Silver medal to Dr. Hansen in 1929.

Dr. Hansen was active in South Dakota Horticultural Society affairs, serving as secretary from 1895-1921 and as president from 1929-32.

Descendants of some of the founders and early members were honored. Lester Collins of Moorestown, the only living son of a founder, presented a review of his father's fruit growing experiences during the 1880-1900 period when the Kieffer pear was grown extensively in Burlington County. Collins is president of the New Jersey Peach Council and of the New Jersey Peach Industry Committee.

A historical pageant will be presented at the annual meeting of the society to be held at Atlantic City on December 4-6. L. B. Coddington of New Providence is chairman of the committee in charge of the program.—*Fred W. Jackson.*

OHIO—New plantings of apple trees in Columbiana, Mahoning, Carroll, and Stark counties have not been sufficient to maintain more than one-half of the present tree

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MARKETING

STATE, REGIONAL, AND NATIONAL apple organizations, in the midst of the hectic first flush of apples coming on the market, are busy with promotional plans, prices, and a host of other details connected with marketing the crop.

From Washington, where the State Apple Commission put into gear the big $¾ million merchandising and promotion campaign, to the fledgling Western New York Apple Growers Association, King Apple was getting the biggest boost of his long life and the apple grower more facts and guidance about market conditions than ever before.

Before the onrushing crop the market sagged, as in every other season, but signs of recovery were evident towards the end of October. A good share of apples was going to processors with prices well up over last year.

HALLOWEEN HAS COME AND GONE but the "cider and doughnuts" day was fully exploited by the National Apple Week Association. Under the aggressive guidance of Norbert Eschmeyer, Apple Week and Halloween received a rousing lot of publicity from food editors, tie-in advertising, and radio and television.

Kick-off for National Apple Week was the IAA-sponsored meeting for food editors who were attending their annual conference at New York's Waldorf Astoria Hotel.

To keep interest of the editors at fever pitch following the meeting the Apple Week Association sent to each editor a Foley Food Mill, an ingenious contrivance for making apple sauce easier and better, and recipes for 21 new apple dishes prepared by Miss Ina S. Lindman, head of United Fruit Company's Home Economics Department.

Through the Owens Illinois Glass Company and the Steve Hannagan Publicity Agency, apples were mentioned on many of the well-known TV and radio programs, such as the Jack Benny show and Queen for a Day. In addition, Pillsbury Mills came out with their new "Apple N'Spice" doughnut, discovered via a $10,000 formula hunt, which gave apples another big boost.

GIFT PACKAGES OF FRUIT make a million dollar business for the Hesperian Orchards, Wenatchee, Wash. Myron Foster, Sr., took the marketing of his fancy fruit into his own hands 12 years ago and developed a mail order business which last year sent 150,000 packages of cherries, apricots, peaches, apples, and pears to city homes all over the world. Today he employs a regular staff of 15 and as many as 200 additional workers during peak seasons.

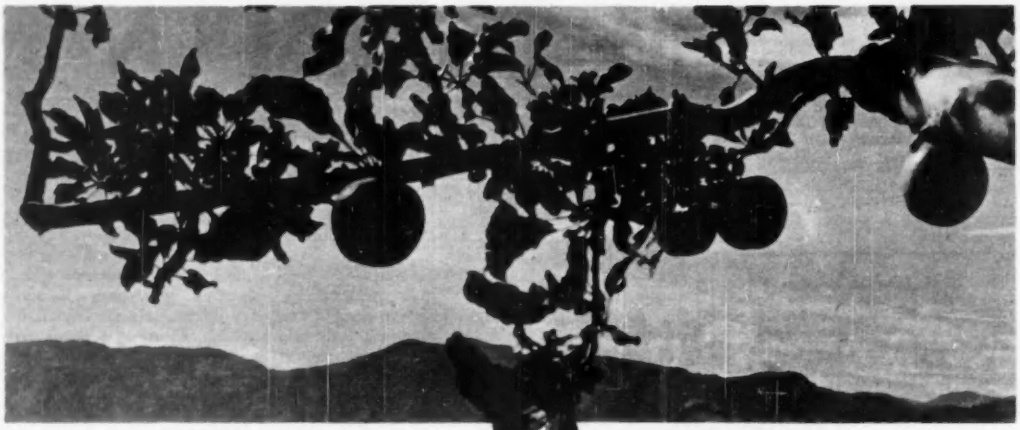
Fruit jams and jellies are also sold by mail as well as two new products, pickled cherries and pear honey. Cherries are attractively packaged in Pliofilm, which allows the fruit to breathe. According to Foster, the Pliofilm-wrapped cherries will stay fresh and the stems remain green on arrival at points as far as eight days away from Wenatchee.

The success story of the Hesperian Orchards gift fruit business is but one of many and has been repeated many times over by other enterprising growers throughout the country.

EVER SINCE PARKER EARLE made the first shipment of fruit under refrigeration on the Illinois Central Railroad in 1866, the refrigerator car has been a prime factor in widening the market for fruit. Shortages of cars, which must be available in large numbers at harvesttime, could cause great losses to growers. With 122,000 new freight cars needed by August, 1951, and with steel in short supply, the old threat of car shortages was raised again.

Recently, however, the Pressed Steel Car Company came up with an answer to the problem with their Unicel car, made of molded plywood. Derived from war-tested principles used in the famous PT boat, the car is of one-piece construction and reported stronger than regular steel cars, which contain 20 tons more steel. The car is a combination freight-refrigerator car and its larger capacity will hold more fruit. On refrigerator tests the Unicel car held cold better than conventional reefers. Unicel uses a mechanical refrigeration unit which is Diesel powered en route and can be plugged into electric outlets at sidings. The new car also may cause less intransit damage to fruit because of the way its unique construction distributes shock.

GOVERNMENT PROGRAMS to help growers of dried prunes and raisins have been cancelled because of healthy condition of dried fruit market . . . National Red Cherry Institute has already made announcement of the 1951 National Red Cherry Pie Baking Contest, to be held in Chicago, February 21, at the Morrison Hotel.



NATIONWIDE FRUITS

● **Citrus packing house** costs in California are being analyzed by the Farm Credit Administration, USDA, with the end in view of finding means of reducing the chief cost items—materials and labor.

The average 1946-47 and 1947-48 packing house costs for oranges were found in their study of packing charges in 31 southern California plants to be 89 cents per box. The cost of handling a packed box in the equivalent of loose fruit was 33 cents and for by-products fruit it was only nine cents. Wide variations from 74 cents to $1.03 per packed box indicated that more efficient operations might be secured through shortcuts in handling and packing.

Volume of fruit handled proved to be the most vital factor in relation to costs. Plants which handled a volume equal to 600,000 packed boxes of oranges averaged 83 cents per packed box while those with less than 200,000 packed box equivalents averaged 94 cents. Materials and labor accounted for an average of 66 per cent of total packing house costs, the study showed.

Where mechanical equipment was used to aid in the various handling processes, labor efficiency was increased in some instances about 50 per cent.

● **The Essex strawberry** and the Amber raspberry are two new introductions of the New York Experiment Station, Geneva. Both were developed primarily for the home garden.

The Essex, a cross between Howard (Premier) and Deutsch Evern, is an extra early variety, ripening about five days to a week ahead of the Howard. It is not recommended for commercial planting because of its medium size and susceptibility to bruising.

The name given the new raspberry is descriptive of its color—yellow-orange. It is of large size, sweet flavored, of high quality, and late ripening. The Amber resulted from a cross between Taylor and Cuthbert.

Planting stock of the new strawberry will be available in another year. A limited number of plants of the Amber raspberry are available from the New York Fruit Testing Association, Geneva.

The Vermilion, a red stele resistant strawberry variety introduced by the University of Illinois, Urbana, is adapted to both commercial and home plantings. Vermilion is a cross between Red Star and Pathfinder. Its foliage is said to be resistant to leaf spot, leaf blight, and leaf scorch.

● **The Old Home variety** of pear is reported by Ohio Experiment Station workers particularly suited as an understock for Bartlett or other pear varieties because of its resistance to fire blight.

A blight-resistant framework is formed by budding or grafting the desired variety onto eight to 10 lateral branches of the understock at a distance of from one to two feet from the trunk.

If fire blight infects one or more of the budded or grafted branches, the infection spreads only to the point of union between stock and scion. The infected limbs are cut off and the balance of the tree continues to grow.

● **A leafhopper** — *Colladonus geminatus*—has been shown to carry the virus that causes Western X disease of peach trees, which is especially injurious in orchards in Utah and Washington. It is believed this same virus causes Little Cherry, a disease that has given Washington cherry growers a lot of trouble.

The discovery was made by entomologists of the USDA and Oregon and Washington experiment stations. This is the third time in the last few years that entomologists of the USDA and cooperating agencies have proved leafhoppers are carriers of important virus diseases of trees.

One leafhopper, the entomologists found, was enough to infect a healthy peach tree with Western X disease.

● **Consumers in Texas,** not unlike consumers in most areas, prefer peaches that are firm ripe rather than green-mature. This preference was determined by a study conducted last year by Kenneth A. Fugett and Guy A. Adriance of the Texas Experiment Station.

The firm-ripe peaches, it was found, outsold the green-mature at a rate of four to one, when prices were equal, and consumers were willing to pay a premium for the high-quality firm-ripe peaches. The firm-ripe peaches moved rapidly enough to reduce most of the waste which might have developed from overripes.

Peaches of uniform size, color, and ripeness moved more rapidly in the retail store and with less waste and spoilage than peaches of varying size, color, and ripeness. Firm-ripe peaches required more careful handling than green-mature.

The order of best container performance for shipping firm-ripe peaches was cell-type box, Spartan box, and bushel basket.

NAMES IN THE NEWS

SIX STATES have recently appointed new chiefs in horticulture who will carry out jobs of prime importance to fruit growers. They are: **Dr. F. F. Cowart,** new director of the Georgia Agricultural Experiment Station; **Dr. R. A. Schroeder,** new head of the department of horticulture at Missouri State College; **Prof. O. B. Combs,** recently named head of Wisconsin's department of horticulture; **Dr. C. J. Birkeland,** Illinois's new chief in horticulture; **Dr. N. K. Ellis,** appointed head of the department at Purdue University; and **Dr. B. S. Pickett,** professor of horticulture and head of the department at the University of Tennessee.

Retiring are **Prof. T. J. Talbert,** who, after 28 years as head of the department at Missouri, has been awarded the title of Professor Emeritus of Horticulture; and **Dr. Laurenz Green,** who has given 25 years of service to Illinois growers.

To the lot of **A. V. Sauerman,** prominent Florida grower, falls the job of directing the operation of the gigantic Florida Citrus Mutual. He succeeds **Alden M. Drury** as general manager. Prize for the best research on fruit problems goes to **Julian C. Crane** of the University of California and **René Blondeau** of the Shell Oil Co. They received the award at the recent annual meeting of the American Society for Horticultural Science, for the best fruit paper on "The Controlled Growth of Fig Fruits by Synthetic Hormone Application."

From a two-acre plot of Blakemores **E. S. Watson,** Logan County, Kentucky, marketed more than 600 crates of strawberries this past season — his largest crop — which brought a total of $4,200.

W. W. Aldrich, formerly with American Fruit Growers, Inc., Hagerstown, Md., has joined the department of horticulture at Michigan. Recently elected as executive secretary of the new Illinois Fruit Council was **James N. Cummins,** secretary of Illinois State Horticultural Society.

After almost 35 years of service with the USDA Bureau of Plant Industry as plant pathologist, **Harry R. Fulton** has retired. He is well known for his research on diseases in citrus and other subtropical fruits. **Paul Friday,** president of the Friday Pack Corp., announces the construction of a new plant in Wenatchee to serve the Northwest fruit producing areas.

WASHINGTON FRUIT OUTLOOK

- **Export Picture Still Blurred**
- **New Congress Cannot Change Economic Picture**
- **Apples and the School Lunch Market**

By LARSTON D. FARRAR
Washington Correspondent, American Fruit Grower

THE PICTURE in regard to large-scale exports to Great Britain, France, or other formerly good apple customers of U. S. growers still is quite blurred, and it is beginning to look as if the British will not repeat the purchasing they did last year.

Exports to South America, particularly Venezuela, have been steady, if small, and the Belgians have been in the market to some extent.

The belt-tightening in Europe, due to the war in Indo-China, the constant threat of a Russian attack from eastern Germany, a gradual rearmament far greater than most European nations expected, and other unsettling factors, have served to upset what few normal trade patterns were re-emerging after World War II.

Only a dribble of exports to the Far Eastern nations may be expected for the remainder of this year.

A NEW, 82nd Congress, whose make-up is now pretty well settled, unfortunately will not be able to change the basic economic facts of life facing fruit growers, or Americans generally, in the coming months.

New taxes will be levied. Prices for all equipment and materials fruit growers use will be higher. Labor costs are going up, according to the Bureau of Agricultural Economics. Per hour earnings for farm workers (all types) stood at 427 per cent of the 1910-14 average on October 1, which compared with 414 per cent a year earlier.

Machinery and equipment also will prove to be more of a problem, as steel becomes more valuable.

CANADIAN ACTION in "de-stabilizing" its currency so that it may reach its moorings in the "free" money markets of the world will not greatly affect either Canadian exports of fruit or imports from the U. S., in the opinion of observers here.

Since the Canadian dollar lost about 10 per cent of its purchasing power when it was made "free" by the Canadian government in September, there was talk that prices in Canada, on items for export, would necessarily have to go higher.

This proved to be true in the case of newsprint, the No. 1 Canadian export, but whether or not it would be the case on apples and other commodities had not become apparent in late October. If it were true, the U. S. export competitive position would be bettered to some degree, insofar as the producers of the two countries are in competition in world markets.

TRUMAN NOLD, executive secretary of the National Apple Institute here, has suggested serious study among apple growers of the problem of how to get the average school child, who once carried his lunch (with an apple or two in the box) but now buys his lunch at school or gets it through the School Lunch Program, to eat an apple every day.

He points out that schools now get the food they serve at lunch in three ways: 1) By their own purchases; 2) by supply through USDA "Section 6" purchase of basic foodstuffs obtainable more economically through large-scale quantity contracts; and 3) by free distribution of commodities bought by USDA under "Section 32" programs, such as the apple purchase program last season.

USDA has wide leeway as to how it can use such funds, but officials point out that they must be concerned primarily with the overall market situation. As long as the apple market holds steady, they are not likely to buy in quantities for the School Lunch Program.

Mr. Nold points out that the schools have buying power all the time. Children must eat every day—and if they were to eat apples every day, it is likely that a three million bushel market would be opened up.

There are, as Mr. Nold points out, many questions about the idea of government-apple grower co-operation on this interesting subject, but he has asked for thoughts from growers. At the request of National Apple Institute, the USDA already has called attention of school authorities to the fact that apples currently are a good buy.

The Texaco service truck makes its regular call to deliver Diesel fuel, gasoline, and greases for use on the Bakman tractors, engines, trucks, and other equipment.

MANAGEMENT EFFICIENCY MAKES PROFITS FOR BAKMAN BROTHERS

TEAMWORK and efficiency make a profitable business for the four Bakman brothers who operate 600 acres of fruit and grain in the San Joaquin Valley of California. While they have not fully mechanized their fruit production, the Bakmans have eliminated a lot of in-between profits of other interests which are usually necessary to get the fresh fruit off the farm and onto the market.

One of their two farms is in the timbered hill country some 40 miles to the east of the main farm. They picked up two old abandoned sawmills and restored them, putting one mill on each farm and powering them with modern Caterpillar Diesel engines to gain the economy of Diesel power and servicing one kind of engine in both farm tractors and sawmills.

At the hill farm the timber is harvested as fast as needed for fence posts, fruit boxes and trays, farm buildings, etc. At the mill at the headquarters farm, the box shook is sawed up, moved to the old house barn, and worked into boxes, drying trays, etc.

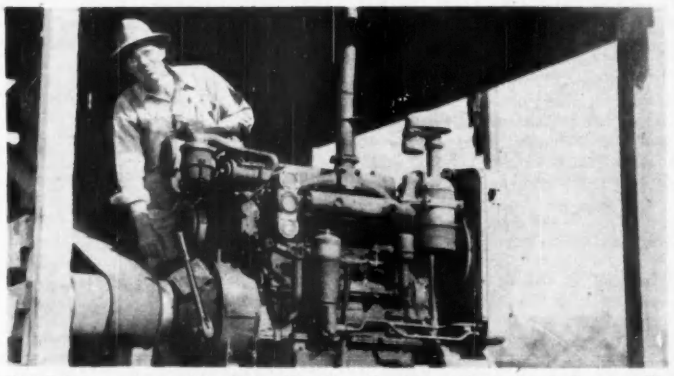
Another economy measure rigged up by the Bakmans is a defuzzer, made from four ordinary turkey feather dusters fastened together and placed at the end of the conveyor line. The brush end is whirled swiftly over the top layer of peaches as they move through the defuzzer.

The Bakmans had noticed, on the color-conscious Los Angeles market where most of their crop goes, that when the lids were pried off for the buyers to inspect the peaches, the fuzz had a sort of "five o'clock shadow" effect on buyers, particularly where there were plenty of peaches. Now, when the lids are lifted at the market, the top layer of defuzzed peaches catches the buyer's eye.

Peaches, plums, apricots, and nectarines are raised on the Bakman fruit ranch. Their equipment includes three D4 Caterpillar tractors, one John Deere wheel tractor, one Ford tractor, one International truck with Cummins Diesel engine, one General Motors truck, one Ford truck, two pick-ups, one Bean sprayer, a Fresno Agricultural Works duster, and two Caterpillar engines, a D2 and a D6.

Summing up the management of their 1,300 acres of fruit, grain, and pasture, Walter Bakman says: "We have to cut corners to keep making a profit in these post-war days.

"Last year we sold 100,000 boxes of fruit, averaging 25 pounds to the box. We pick, pack, and ship all of it, selling locally. However, with all of us on the job dividing up the work, we can and do get teamwork and efficiency."—*F. Hal Higgins.*



Dick Bakman and one of the Caterpillar Diesel engines used to operate the sawmills.

OLD-FASHIONED APPLE BUTTER STIR

(*Continued from page* 13)

and grapes also are grown at Riverview but only the apple crop is large enough for shipment. The largest harvest was in 1947, when 60,000 bushels were picked. In some years the apple crops have been poor, but never have the Bains failed to provide enough fruit at the stirs to keep everyone happy.

Beside munching and stirring, guests also press apples from an old portable cider mill. Nothing intrigues children more than to drink cider made by their own little hands.

Old and Young Are Invited

The Bains are proud of their stir because it is one of the few large social events in Missouri to which children are invited. The 500 invitations which the Bains send each year specifically invite entire families. Children and babes-in-arm thus rub elbows with military personnel, college professors, bankers, and old family friends. Daughter Adeline and her husband, a medical student at Missouri, also invite large groups of college friends.

All those invited do not attend but those who come usually bring friends and relatives. Last year Marjorie Bain greeted so many people that her hands remained swollen for a week. Mrs. Bain's memory is remarkable in many respects. Throughout the afternoon, people, alone, in pairs, and in large groups, stream into Riverview. Yet when the event is over, Mrs. Bain can glance over the guest list and indicate who failed to attend.

Out-of-town guests begin arriving for the event shortly before noon and the Bains are hosts to them at a luncheon. The guest list is comprised largely of Missouri residents but occasionally friends from neighboring states attend. Many stirrers for years have been coming regularly from as far as St. Louis and Kansas City, about 150 miles away.

Weather plays an important factor in the number of stirrers. In 1948, bitter, cold weather resulted in only 300 people. Needless to say, the kettle was stirred vigorously. Until 1949, the stir had been rained out only once. Last year the rains came just as the event officially began at 2:00 P.M. Although 200 attended, the kettle had to be taken off the fire inasmuch as no one would stand in the rain to stir. The cooking was completed the next day by the Bains.

In addition to doing something with apples, guests like to sightsee, particularly from the second-story of the Bain's lodge. Built on a bluff, the house overlooks the apple orchards of Boone County and the Missouri River, some four miles away.

Riverview Lodge itself is of value to those interested in sight-seeing from a historical viewpoint. The house was once a slave quarter which burned down and the fireplace which the Bains still use is more than 100 years old.

When Pat and Marjorie moved in, the house contained two rooms, 16 feet square. Today it contains either 12 or 13 rambling rooms. The Bains are not sure of its size, never having taken an accurate count.

In the winter, the Bains migrate to Columbia where they own an apartment. Quaintness, says Mrs. Bain, is not adequate protection from the cold. While they are away, a foreman takes care of the apple orchard. He lives the year around in a neighboring house which Mrs. Bain claims is "better than ours but not as picturesque."

Pennies for Good Luck

But atmosphere is needed for an old-fashioned apple butter stir and Riverview Lodge is the right place for such an event. Its long history blends perfectly with the old tradition of tossing copper pennies into the kettle of boiling apple butter. Newcomers make wishes when tossing the coins. They think it will bring them good luck. Oldtimers know better. Pennies prevent the apple butter from sticking to the bottom of the kettle. Marbles were used originally but in keeping with the ever-increasing mercenary trend, copper pennies were introduced.

The Bains, however, are not ones to sit and count their pennies after the guests have departed. Their only objective is to cook a batch of tasty apple butter and to see that everyone has fun in helping. Through the years the Bains have accomplished their purpose and thousands of stirrers have enjoyed many Sunday afternoons under the apple trees of Riverview Orchard.

"Sure I've got to take him. He's the only one who knows the orchard."

NUT GROWERS NEWS

New Officers

THE NORTHERN Nut Growers Association at its 41st annual meeting held in late August at Pleasant Valley, N.Y., elected as its 1950-51 president, Dr. William Rohrbacher, 811 East College St., Iowa City, Iowa. Dr. Rohrbacher, a physician and farm owner who has been active in the NNGA for 16 years, will preside over next year's meeting at Urbana, Ill.

The other officers (re-elected) are: Vice-president, L. H. MacDaniels, Cornell University, Ithaca, N.Y.; treasurer, Sterling A. Smith, 630 W. South St., Vermilion, Ohio; secretary, J. C. McDaniel, University of Illinois, Urbana, Ill.

Persian Walnut Contest

The NNGA, after a trial contest among its members last season, is now inviting entries in an "open" contest this fall for the best seedlings of Carpathian and other hardy "English" walnuts. Any grower may enter, without fee, a 25-nut sample from his best tree, to compete for prizes ranging up to $25. The only requirements are that the tree be a seedling and grow where it has been subject to winter temperatures of 0° F. or lower.

If you are the owner of such a tree, and not a member of NNGA, the secretary will send you entry blanks on request, to enclose with the walnuts.

Harry R. Weber

The Honorable Harry R. Weber, of Cincinnati and Cleves, Ohio, two-term president of the NNGA in 1923-25 and a member since 1913, suffered a stroke at Reading, Pa., while on his way home from the 1950 meeting and died there on September 2.

He was one of our three oldest members and a life member who continued active in the association's affairs up until the present year.

He was one of the pioneers in the selection and culture of northern pecan varieties, also growing black walnuts and hybrid filberts on his farm near Rockport, Ind., which has one of the largest orchards of hardy nuts north of the Ohio River. In recent years he also has fruited several hardy varieties of Persian walnut at his home in Cleves.

Harry Weber's enthusiasm and industry had much to do with the fact that Ohio now leads all the states in NNGA memberships. He will be long and gratefully remembered by nut growers in America.—*J. C. McDaniel, Sec'y, Northern Nut Growers Assn., Inc.*, c/o Hort. Field Laboratory, University of Illinois, Urbana.

APPLE STORAGE SANITATION

By WILLIAM R. COLE

Massachusetts Fruit Growers Association

GOOD KEEPING of apples in fruit farm cold storage depends upon proper conditions in the storage. Refrigeration equipment of sufficient capacity to cool the fruit rapidly is a requirement. Cold must be properly distributed so that it affects the entire interior of the storage.

Equally important is proper sanitation of the cold storage. This means a thorough cleaning and airing and a careful and complete disinfection.

A chlorine solution for disinfecting is recommended. There are several such compounds on the market, of which "B K" is generally available.

A four-tenths of one per cent chlorine solution is recommended. If "B K" is used, the contents of one 28-ounce bottle should be dissolved in 30 gallons of water. The disinfectant should be applied in sufficient amount to thoroughly wet the ceiling, walls, and floor of the storage. It is better to err on the over than on the under level of usage.

Carried-over containers should be included in this disinfection treatment. If stored in the storage, they should be removed and disinfected before used or before returning them to the disinfected storage.

Immediately after application of the disinfectant, the storage should be closed tightly for at least 48 hours. Where blowers are a part of the refrigeration equipment, they should be operated for three or four hours a day to help in thoroughly distributing the disinfectant to all surfaces. Only the blowers, not the refrigeration unit, need be operated.

At the end of the "closed up" period, the storage should be opened until all chlorine gas odor has disappeared. Here again running the blowers for a few hours will help to break up any "pockets" of gas remaining in the storage.

A standard formaldehyde solution of one gallon to 50 gallons of water is a good disinfectant but has not proved to be as good for blue mold control as the chlorine treatment. Procedure in its use is the same as for chlorine.

GROUP ADVERTISING PAYS DIVIDENDS

TO INCREASE sales of fresh fruits and vegetables, direct from grower to consumer, leading growers in our area have formed a club to advertise their products. We have adopted a blue label, and uniformity of excellence of each grade is guaranteed by a stamp on the label of each member.

Our experience in marketing produce by this means has proven that a local brand can dominate one's local market. The same consumers buy from us year after year, and they bring or tell others about our produce.

A big sign across the road at our farm, advertising what we have to sell, and advertisements in daily newspapers bring the consumers to our market.

During the peach season, this individual and joint advertising keeps the automobiles coming and going in a continuous procession, and there are often a dozen or more cars in line at one time. At the height of the peach season, retail cash sales at our farm reach $500 a day.

In marketing our apple crop, we save money on the high cost of containers by advertising that the consumer may bring his own containers or a refund will be made if our containers are returned in good condition within 10 days.

We no longer make deliveries to consumers because of the high cost of time, labor, and trucking. However, delivery is made within a 15-mile radius to anyone who takes a whole load and who pays cash in advance at wholesale prices.

We are now selling a large part of our sweet potato crops to two civic associations that pay us five per cent more than we net from the New York market, yet they supply their members for less than the current retail price. Delivery is made to one central point, thus saving much bother and expense, and we only handle orders for $25 or more.

We are satisfied that city folk, when properly approached, will buy commodities like winter vegetables to store in their cellars. Keeping up the high standard of goods will bring repeat orders.

If a sufficient number of orders can be secured from customers in one section, so that long hauls for small quantities will not be necessary, delivery is profitable. Beside the profit on the produce, there is a savings of 10 per cent commission to the merchant.—*James Shoemaker, New Jersey.*

STATE NEWS

(*Continued from page* 15)

numbers, states R. C. Scott, Ohio Experiment Station rural economist. This startling information was revealed by a study of the records for 1949-50 of 121 commercial orchards.

About 15 per cent of the trees in these orchards were 12 years old or younger, the study showed; about 35 per cent were from 12 to 20 years of age; and 50 per cent were from 20 to 30 years or older.

The study indicated, according to Scott, that more emphasis has been placed on new plantings by growers having larger acreages than by those having smaller plantings.

At the same time, the study indicated a shift in the varieties planted. More emphasis on the red varieties, such as Stayman, Rome Beauty, and Delicious, is being stressed by the growers.

Coinciding with this shift, growers have been abandoning, says Scott, the practice of planting all their acreage to one variety and are now dividing their acreages about equally among four or five of the leading varieties.

WISCONSIN—A merchandising program designed to train and educate retail merchants of fresh fruits and vegetables in the principles of sound merchandising has been organized by the Wisconsin Agricultural Extension Service.

The program is to consist of a one-day demonstration in a mobile unit fully equipped with display racks, products, etc. The unit is to be located in centralized places throughout the state so chosen as to be available to as many retail grocers in the area as possible.

The best channels of trade for apples today are open only to fruit that is so uniformly graded and so dependably packed that it can be accurately described in a few words and can be bought in complete confidence without personal examination.—*Herschel H. Jones, Wholesale Fruit Distributor, New York City.*

A nominal fee of $1 per person will be charged for participation in the Retail Fresh Fruit and Vegetable Merchandising Program. This includes, in addition to the demonstration, service calls at the individual stores by extension service workers, at which time the principles shown at the demonstration are adapted to the individual store conditions.

The program is under the supervision of Prof. John I. Kross, marketing specialist, and is directed by Glenn E. Coppens of the University of Wisconsin Agricultural Extension Service, Madison.

IDAHO—Managing one of the largest fruit growing enterprises in Idaho is the job of Robert McBirney, Boise. The 275 acres in orchards under Robert's close supervision were planted by his father, William Samuel McBirney, who passed away in November, 1948, at the age of 71. The elder McBirney was one of the first prune and apple growers in the Boise Valley. At one time he had one of the largest prune acreages in the United States. He was prominent in civic affairs and served in the Idaho State Legislature. He also served a term as president of the Idaho State Horticultural Society, a post held by Robert in 1947.

Robert is just as enthusiastic about fruit growing as was the elder McBirney, faithfully following the best practices known in his endeavor to raise top-quality fruit.—*Anton S. Horn, Sec'y, Boise.*

KENTUCKY—The Cumberland Strawberry Growers Association recorded sales during the 1950 season of 1,981 crates of berries which grossed $13,551.23, states County Agent Hugh Hurst of Pulaski County. In addition, the 68 association members sold more than $6,000 worth of berries locally.

From nine-tenths of an acre, Louis Norfleet of Pulaski County sold $969.52 worth of berries through the association and $150 more locally. Ballard Sowder, of the same county, grew berries worth $1,191 on one acre.

A quarter of an acre of Tennessee Beauty and a fourth of an acre of Blakemore produced 112 crates for Joe Eggers of Pulaski County. The association paid him $547.63.

No. 1 berries, of which the association sold 1,425 crates, brought $7.83 a crate and No. 2 berries brought $5.

From where I sit ... *by* Joe Marsh

Squint's Drumming For Fair Play!

Squint Miller's mighty proud of the lot he owns that fronts on River Road—one of the prettiest spots around here.

He's been in a stew about it lately, though. Seems that trash-dumpers take one look at his property, stop their car or truck, and out goes a load of rubbish, spilling all over his place and most of the roadside, too. Wouldn't that make *you* mad?

Last night Squint dropped by the house. Over a friendly glass of beer, he tells me what he's done. "I put a couple of empty oil drums out there," he says, "with a big sign reading: 'If you must dump trash—use these—I like to keep *my* property clean!' "

From where I sit, Squint's sign should make any would-be roadside trash-dumpers pretty darned ashamed of themselves. It seems some folks just have to be reminded, now and then, that they ought to have as much regard for their neighbors' rights as they do for their own.

Joe Marsh

NEW FOR YOU

New Corrugated Apple Basket

This new apple box has a lot of eye appeal and can be used for many other purposes after the apples are eaten. Wherever it has been used growers have gotten higher prices. Sturdily constructed of heavy corrugated board with die-cut hand holes, the box is shipped to the grower flat. The box is made in bushel and half-bushel sizes and is attractively priced. Why not market your crop this fall in a box tested for the past two years? Write Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo., for prices and full information.

Four Hands

Carrying fruit from the cold storage, packing shed, or truck to the roadside stand is tedious and time consuming. The Caylor Sales Co., Wesleyville, Erie County, Pennsylvania, has developed a handle that carries two baskets. These are other advantages: no splinters or torn fingers. The metal bar that does the work is well made and inexpensive. Why not write them for full details?

Is Your Future In a Diesel?

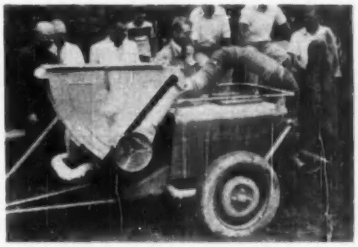
A lot of growers have been wondering whether a Diesel truck will fit into their orchard operations. A new booklet just issued by General Motors Truck & Coach Division, entitled "Quiz," is basic and will help you answer a lot of questions regarding Diesel operation of trucks. Many growers who have Diesels tell us that they pay for themselves and, with the improvement in the Diesel motor, the GMC truck offers many advantages. The pamphlet is free; just write GMC Truck & Coach Div., Pontiac, Mich.

- CHAIN SAW BOOKLET
- PASTEUR SPRAYER

It's Easy with a Chain Saw

I just finished reading a very interesting pamphlet on chain saws. Taking out old fruit trees or clearing land for new plantings is easy with a chain saw. A number of growers have already invested in them and, from all reports, they have more than paid for themselves. They are easy to use, of lasting construction, and every grower should at least read this free booklet. Write to Henry Disston & Sons, 1167 Tacony, Philadelphia 35, Pa.

Versatile French Sprayer



The first foreign-made sprayer to be introduced in the U. S. is the "Pasteur" sprayer-atomizer. A small, mobile machine, it may be used for conventional spraying, concentrate applications of liquids, dry-dusting, and wet-dusting. The Pasteur sprayer is amazingly versatile and different type outlets are available for the vineyard, small trees, high trees, row crops, citrus, and weed control.

All insecticides can be applied from the machine from Bordeaux mixture to highly concentrated liquid insecticides, emulsions, and oil and water suspensions, as well as dust concentrates. Used as a concentrate sprayer, the Pasteur machine gives four to eight times quicker application.

Models are available with 105-gallon tank and 210-gallon tank. Pump is centrifugal-type and the fan is coupled direct to the motor. Manufactured at Colombes, France, the machine is priced F.O.B. New York City. Write Nomaco, Inc., 20 East 35th St., New York 16, N.Y.

BUILD A POLE-TYPE PACKING HOUSE

(*Continued from page 7*)

to the orchard if not right in it. Arrange its location to allow for enlargement by adding to its length should more packing space be needed. A refrigerated storage may be a part of the plan and the site should be selected so as to provide space for this improvement should it become possible and practical to add it at a later date.

Poles for this shed are set 5 feet in the ground and the platform is at truck platform height or about 4 feet above ground. The ceiling height should be 10 feet. To make up for any variations in ground level, and to permit the pole to extend up to the top of the rafters so the pair of rafters beside each pair of poles can be fastened direct to them, their length should be 20 feet and a top dimension of 5 inches is suggested. This fastening of the roof to the poles anchors the open shed securely to protect it from wind damage.

Setting the Poles

The two rows of poles are set 30 feet apart, outside measurements, and their spacing in the row is 10 feet on center. A 2 x 12 near the top on each side of the rows of posts forms the open plate upon which the roof trusses rest. Here some good fastening with 60d spikes and bolts is required after the pole has been flattened.

These roof trusses are spaced 5 feet apart and consist of a 2 x 8 tie across the building at the plate with rafters of 2 x 10s, 18 feet long. A little bracing completes the truss.

Special nailing of the rafters to the cross tie is necessary as this is the critical point of the truss. A 2½-inch split ring connector with a ½-inch bolt will serve nicely. These connectors are becoming quite generally available and are inexpensive. A special tool is required to form the groove for them to set into.

Construction of Roof

A roof covering of shingles is shown in the drawing. The shingles may be of wood or composition and they are applied over wood sheathing. For wood or composition shingles the sheathing should be matched. To nail roof boards over the trusses on 5-foot centers, it is suggested that two 2 x 4 rafters be set in between each pair of trusses spaced on 2-foot centers and of course measured from the end of the building or from the center of alternate trusses.

If the roofing is of galvanized sheet iron or aluminum, it is nailed to 2 x 4 purlins or nailing strips placed on edge across the trusses on 30-inch centers or less, depending on the gage and stiffness of the roofing. Long, screw-type nails with lead washers for galvanized steel or plastic washers for aluminum roofing will provide secure fastening for the metal roof. If the roofing sheets do not fit together between nailing strips, sheet metal screws may be used to pull them together.

The siding is shown to be barn boards fastened to nailing girts on the ends of the shed. On the rear wall, siding or clapboards are applied directly to the poles and window framing studs. The windows slide sideways for a convenient opening arrangement.

Laying the Floor

The floor of the packing shed requires 5 rows of railroad-tie posts the length of the shed and 5 feet apart in the row. For a beam over the posts three 2 x 10s will be needed on the three inside rows of posts and two 2 x 10s will serve on the two outside rows. Joists 2 x 10, 10 feet long, are placed 16 inches on center.

The floor should be 2-inch lumber for hard service; however, if one has full 1-inch thick boards of sound hardwood that are well seasoned they may be used. Where the packing shed is used in cold weather, the space around the floor platform should be closed off to keep out cold air.

HOW EFFICIENT IS YOUR PACKING HOUSE

(*Continued from page* 8)

best, those who contemplate the erection of such facilities should consult an architect and refrigeration engineer before making a final decision.

Most packing house managers agree that when a considerable volume of fruit is to be packed, empty packages should be stored above the packing area. When handled in this way they can be moved by gravity through chutes to the packing house floor as needed.

The majority of the managers who pack 20,000 bushels or less felt that ground floor package storage was preferable. For one thing, if packages are stored above and fed down by gravity, the man who performs this service must be on duty at all times. If the operation is to be economical, the volume of fruit packed must be sufficient to keep him continuously employed.

In packing houses where the floor is at the ground level, it is often desirable for trucks to drive into the building. Under these circumstances the ceilings should be high enough to accommodate the largest trucks that are likely to be used. The legal maximum height of motor vehicles in most states is 12 feet 6 inches.

In many houses the empty crates, face plates, and other supplies are carried from place to place on overhead conveyors. The ceilings in a plant in which such devices are to be used should be high enough to accommodate conveyors of this sort and still leave room for the help to walk under them without stooping. Generally speaking, the most desirable height will lie between nine and 13 feet.

Good Lighting Is Essential

More than one-half of the employees in most packing plants are either sorting out blemished fruit, selecting "facers," or doing other work that requires good light. Inasmuch as natural light is the best, the walls surrounding areas where grading and packing operations are carried on should include, if possible, an ample number of generous sized windows.

Since it is often necessary for packing houses to run during the late afternoon or evening, it is usually necessary to provide electric lights even though there is enough natural light during the day. Because of the shape of fluorescent tubes and the quality of the light which they emit, many operators say that for packing house installations they are superior to other sources.

For the kind of work done at sorting belts and facing stations, lighting engineers recommend 100 footcandles of illumination. This probably can be best obtained by hanging fluorescent lighting fixtures directly above the work and within a few feet of it.

Flexibility in Packing Operations

Flexibility is a very desirable feature of all fruit packing operations. The tonnage of any one crop or combination of crops is likely to vary considerably from year to year.

In addition to daily and seasonal variations in volume, there are other circumstances under which flexibility is a desirable feature of a packing plant. The facilities of any one plant, for example, can often be used to advantage to pack several different crops in succession if the shift from one to another can be quickly and economically accomplished. Using the facilities in this way helps to reduce overhead and decreases per unit cost.

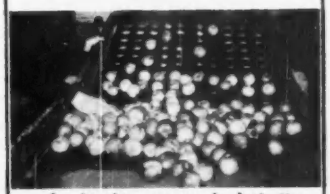
The Packing House Investment

When the volume of fruit to be packed does not exceed 10,000 bushels, the necessary grading machinery usually can be set up in a barn, garage, or machine shop that can be temporarily cleared of other equipment and used as a packing house during the harvest season.

If a suitable structure is not already available, the amount of money to be spent in erecting one should be governed to considerable extent by

(*Continued on page* 28)

HANDY ANDY



A cleaning screen is just the thing for keeping loose dirt and other foreign objects out of an apple grader. Howard L. Jenkins, Derry, N. H., made his own for a few cents by buying junk belting off textile printing machines. After cutting the material down to the three-foot width of his grader, Jenkins punched two-inch holes over the entire surface. These allow all foreign objects and any apples smaller than two inches to drop through.—*Charles L. Stratton.*

OPPORTUNITY-ADS

Only 25c a Word—CASH WITH ORDER. Count each initial and whole number as one word. ADDRESS AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland 13, Ohio

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CHAINS—TRACTOR, TRUCK, ROAD GRADER, BUS. Write for circular, give tire sizes—Prompt shipment. HORNER TRACTOR SALES, Geneva, Ohio.

CIDER MILLS

FOR SALE: CIDER PRESSES NEW AND REBUILT, all sizes Farquhar and other makes; Apple Sizers and Apple Butter Equipment. W. G. RUNKLES' MACHINERY CO., 185 Oakland St., Trenton, New Jersey.

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200 ACRE RANGE: GOOD HOUSE, PLENTY WATER, good for cattle, hogs, sheep and goats. Also poultry of all kinds. Creek on property. Now leased for oil and have royalty. WRITE BOX 376, Smithville, Texas.

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ATTENTION HOME OWNERS AND FARMERS. BIG savings are yours on Clothing, Grain Handling Equipment, Stoves, Furnaces, Space Heaters, Poultry and Dairy Equipment . . . in the New 236-page Jim Brown Fall and Winter Catalog. It's packed with over 15,000 outstanding bargains! Write today, it's FREE! BROWN FENCE AND WIRE DIV., Dept. M-4, Cleveland 3, Ohio.

SPEED SPRAYER, MODEL 38, HEAVY DUTY, 6 CYLinder, J.E.D. Hercules Engine and 500 gal. capacity. EMMETT DODDRIDGE, Centerville, Indiana.

WET DUSTER, IDEAL FOR ORCHARD OR ROW crop. Used only few hours as demonstrator. Value new $1,300.00. Now only $950.00. Write for literature. TERMINAL SALES CORPORATION, 8501 Brandt, Dearborn, Michigan.

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FOR SALE—DELICIOUS HONEY CLOVER OR BUCKwheat, 5-lb. can $1.35; six 5-lb. cans $7.50; 60-lb. can $10.00. Prepaid. FRED WRIGHT, Arkport, New York.

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"HOW TO BREAK AND TRAIN HORSES"—A BOOK every farmer and horseman should have. It is free; no obligation. Simply address BEERY SCHOOL OF HORSEMANSHIP, Dept. 13811, Pleasant Hill, Ohio.

MISCELLANEOUS

MAKE MONEY ADDRESSING ENVELOPES. OUR instructions reveal how. PAUL GLENWAY, 5713 Euclid, Cleveland 3, Ohio.

LATEST WALNUT CRACKER, DIRECT FROM MANUfacturer. BENN THOMPSON, Harrisonburg, Virginia.

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FOR SALE—150 ACRE FRUIT FARM ON MAIN HIGHway. 90 acres Apples, 10 acres Peaches. WRITE AMERICAN FRUIT GROWER, BOX 110, 1370 Ontario St., Cleveland 13, Ohio.

POULTRY

POULTRY FARMERS, BROILER GROWERS, TURKEY Raisers read the new American Poultry Journal for latest ideas and greater profits. 12 months, 50c. Special offer, 4 years, $1.00. AMERICAN POULTRY JOURNAL, 544 South Clark, Chicago, Ill.

TRADE MARKS

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D. C.

WANTED TO BUY

WANTED, HIGH PRESSURE SPRAY PUMP, 20 OR 30 Gal. Capacity. I. B. Work, Route 2, Paris, Tennessee.

PACKING HOUSE

(Continued from page 27)

the purposes other than fruit packing for which it is intended.

It is estimated that a plant with a capacity of 50,000 bushels per season would cost between $20,000 and $25,000 at the prices prevailing in 1950.

A well-planned modern fireproof structure with sufficient space for grading and packing a crop of 200,000 bushels probably will cost $100,000 or more. This amount of money should finance a structure that would not only provide space for grading and packing the fruit, but also for those activities commonly carried on in a community packing house.

While new construction is preferable, some growers can effect substantial savings by converting existing structures into packing plants.

Equipment Should Fit the Job

As most units of grading and packing equipment last for many years, they should be selected with care. Be sure to choose machines that are large enough to do the job. Remember that forcing equipment beyond its capacity means damage to the fruit and loss to the grower. Inasmuch as the capacity of the entire line is determined to considerable extent by the capacity of the sizing unit, make doubly sure that this piece of equipment is of ample size.

Even the best machines are subject to occasional mechanical breakdowns and reasonable assurance that parts and service are readily available is of the utmost importance.

Three Rules Govern Efficiency

Inasmuch as there are many practical solutions to the problem of packing house design, no actual plans are included in this article. Producers who plan to remodel, acquire, or build packing plants should first analyze their requirements and then obtain the services of a qualified architect.

In making their plans and in consulting others, growers should bear in mind that the efficiency of a fruit packing operation depends upon having:

1) A packing house of good design.

2) Equipment of adequate capacity.

3) A capable and well-supervised crew.

A bulletin entitled, "Fruit Packing House Plans and Operations," recently published by Michigan State College, may be obtained by addressing The Bulletin Room, Michigan State College, East Lansing, and asking for Special Bulletin 362.

MY FAVORITE FRUIT RECIPE

To give added zest to your Thanksgiving dinner—

FESTIVE CRANBERRY SALAD

Soak 2 tablespoons gelatin in 2 tablespoons cold water. Bring to boil, stirring until dissolved, 2 cups sugar, ½ cup water. Add 1 pound cranberries and boil until nearly all berries pop. Stir in the soaked gelatin; allow to cool.

Add 1 tablespoon lemon juice, 1 cup chopped nut meats (preferably English walnuts), 1 cup celery cut in small pieces.

Pour into mold; chill. When firm, unmold and pile cottage cheese in center of ring.

Swan, Mo. Mrs. Wallace Kratz

CRANBERRY FRAPPE

1 quart cranberries 1 lemon
1 pint water 1 orange
2 cups sugar 1 egg white

Cook cranberries in the water. Rub through a sieve. Add sugar, juice of lemon, and orange. When cold, freeze until slushy. Then stir in stiffly beaten egg white and finish freezing.

W. Sunbury, Pa. Mrs. Aleta McMichael

APPLE SNOW

Use tart, unpeeled apples and cook in as small amount of water as possible. When done, put through a colander or strainer and add sugar to taste, stirring well to blend sugar. When very cold, and for each 2 cups of sauce, add the stiffly beaten white of an egg. Fold the egg white into the sauce and pile in peaks into sherbet glasses and serve immediately.

Benton Harbor, Mich. Mrs. Florence Bossenberger

CRANBERRY TARTS

2 cups cranberries
1 lemon (quartered and seeded)
1 apple (peeled and cored)
½ cup seedless raisins
1½ cups sugar
Baked tart shells

Put fruit through food chopper; add sugar and mix well. Let stand to blend flavors. Spoon cranberry mixture into baked tart shells and top with swirl of softened cream cheese.

Makes about 2 cups of filling, or enough for 8 large tarts.

Wind Ridge, Pa. Miss Elsie Hull

HEAVENLY JAM

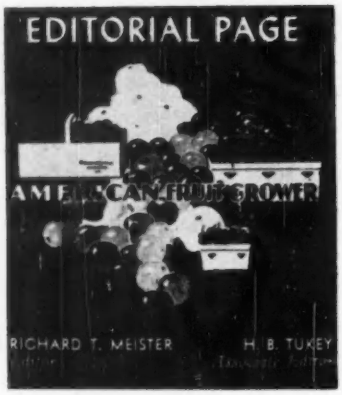
10 pounds grapes
4 oranges
3 packages seedless raisins

Wash and pulp the grapes. Cook the pulp and run through the colander. Add the raisins and the skins of the grapes. Cut up the meat of the oranges and yellow rind, being careful not to use the white skin.

Mix the ingredients and measure, and to each cup of grape mixture add one cup of sugar. Cook slowly until mixture thickens. Seal in sterilized glasses.

Tombstone, Ariz. Mrs. Harry Esterbrook

We will pay $1.00, upon publication, for each fruit recipe used. Please send your recipes to Home Economics Editor, American Fruit Grower, 1370 Ontario Street, Cleveland 13, Ohio. Unused recipes cannot be returned.



Stop that Thief!

THERE IS nothing so annoying as surprising someone in the orchard stealing fruit. We can forgive mischievous youngsters, but the man or woman who surreptitiously steals into the orchard at the break of dawn or in the descending twilight with a burlap bag makes the grower's blood boil!

It isn't so much the loss of fruit which angers the growers as the psychological intrusion on what we always regard as property and human rights and which every decent man from childhood has been taught to respect and obey.

What can be done to prevent such petty larcency? Many growers depend upon dogs for protection, but there really isn't anything that will cure such evils. We call them human frailties; and, therefore, perhaps it is best not to allow such intrusions to raise one's blood pressure but to take the more philosophical attitude that such human beings are just like the rodents which girdle the trees or the insects which spoil the fruit.

Time to Join Hands

IS PROGRESS being made in the marketing of fruits? The Achilles heel of any producer of a perishable product is his poor bargaining position in relation to the buyer.

The small grower may truck his fruit to market only to find he must sell or haul his fruit back to the farm. The large grower shipping to distant markets is at the mercy of the produce trade.

As expressed by a New Jersey grower, "All the great economies effected by growers in producing fruit can easily be offset by difficulties of coordination in the marketing of the crop."

Our New Jersey friend has touched upon the core of the problem when he mentioned coordinating or co-operating to overcome the inherent weaknesses in the marketing system.

Since the end of the second World War great strides have been made in this direction. A veritable revolution has taken place in our midst.

Note the organizations that have sprung up to strengthen the hand of the grower—the National Red Cherry Institute, the Florida Citrus Mutual, Western New York Apple Growers Association, Texas Citrus Commission, Maryland and Virginia Apple Advertising Commission, the Missouri Apple Merchandising Program, and the Knouse Foods Cooperative. More growers have joined hands to solve their marketing problems in the last five years than in the preceding 25.

Look, also, at the continued and growing strength of such old-timers as the National Apple Institute, National Peach Council, Washington State Apple Commission, Florida Citrus Commission, California Fruit Growers Exchange, and many more.

Grass roots feeling for co-operation to overcome the big problem of marketing is growing steadily. Those fruit growers without a strong marketing organization might find that now, at long last, a sensible plan for group action would receive unexpected support.

Fruit Production at a Glance

	1939-48	1949	USDA Oct. 1, Est. 1950
	Thousand Bushels		
Apples	88,407	133,742	120,104
Eastern	36,406	56,374	55,052
Central	13,444	20,374	18,023
Western	38,557	48,994	46,429
Peaches	70,090	74,818	52,407
Cling., (Calif.)	18,151	24,085	19,668
Free., (Calif.)	11,009	11,126	9,626
Pears	30,295	36,404	30,657
	Tons		
Grapes	3,078,400	2,862,100	2,520,200
Apricots	233,510	197,600	198,100
Plums (fresh)	90,580	96,100	82,900
Prunes dry (Calif.)	190,600	152,000	143,000
Almonds	23,310	43,300	36,600
Walnuts	65,880	88,100	63,000
Filberts	5,968	11,140	6,100
Pecans	120,955	128,174	109,731
Improved	51,267	47,373	48,454
Wild	69,688	80,801	61,277
	Barrels		
Cranberries	714,580	840,400	941,000

Ice Machinery and the Fruit Industry

TRANSPORTATION has played a major role in the development of the highly specialized fruit industry of America, but without the development of artificial ice and refrigeration machinery it would have been sharply limited.

In the early days much of the desired movement of perishable products was from southern sections where winter cold failed to produce natural ice. Attempts were made to carry natural ice by boat to southern ports and to return with iced perishable produce. But progress was slow.

Then, during the period 1880-90, came manufacturing machinery and artificial ice. Two hundred plants were established in Florida in 1889 and several were erected in Virginia in 1891-92.

For a bit of additional history, the first ice-cooled freight car was built in 1857 and patented in 1866. A shipment of strawberries was made by a Mr. David in 1868 from Cobden, Ill. to Chicago. A carload of meat was sent from Chicago to New York in the late 1870's by Gustavus F. Swift.

The first cars with artificial ice were crudely insulated boxcars with no ice racks. Re-icing in transit was unheard of. By 1906 the railroads had really become interested in refrigerator cars.

A major development was made in 1916 by the introduction of floor racks, thus permitting circulation of the air within the car. In 1920 friction drive gears, forced air circulation, steel bulkheads, and insulation were added. With better trucks came less jostling and bruising, finally culminating in 1944 in the modern refrigerator car.

But this is only half the story. The rest is in the constantly increasing rise of refrigeration both in the terminal markets and back at the points of production. No longer is it simply a matter of transportation. Now comes the consumer demand for ever better quality fruit; and this in turn is dependent, in large measure, upon good harvesting, handling, and storage practices.

Many new cold storages have been constructed this past summer throughout the country by fruit growers. They mean more rapid cooling at the orchard, with resulting better handling qualities of the fruit, possibilities of packing out of storage during winter months, and more orderly marketing.

The trend is logical and is returning real profits to growers.

You're Certain of Service When It's a Myers Sprayer!

Ever try to get service or replacement parts for an "orphan" machine? Brother . . . it's tough! It's also one of many reasons why a Myers Sprayer is such a sound investment. Myers has been building better pumping equipment for 80 straight years —and will be building it for many more years to come. Which means you'll *always* have replacement parts and expert service readily available from a nearby Myers Sprayer dealer. Just as you'll always get the best of service from any Myers Sprayer . . . more work capacity, wear-resistance and downright dependability . . . more years of thorough orchard protection at lowest operating costs. The coupon below will bring you dealer's name and free descriptive literature.

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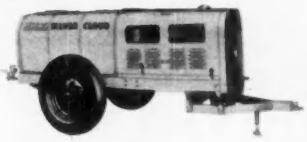
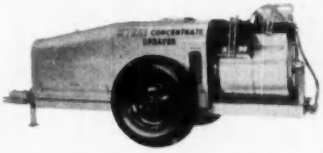
CAPACITIES: 6 to 50 GPM.—PRESSURES: 30 to 800 LBS. for any size acreage—for any spraying job

New GP Sprayer—an ideal all-purpose spray rig for all orchardists, farmers and ranchers. 5 wheel and skid types. Capacity, 7 gpm.

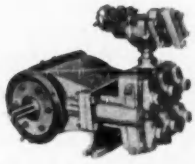


2-wheel, 4-wheel and skid types for gun and boom operation; power take-off and engine-drive.



New Concentrate Sprayer—the latest and greatest advance in orchard protection equipment. Cuts fruit spraying costs 40%!

FULL LINE OF MYERS POWER PUMPS BUILT THROUGHOUT TO DELIVER MORE WATER PER DOLLAR! ADAPTABLE FOR IRRIGATION, FIRE-PROTECTION, BOOSTER SERVICE AND MANY OTHER NEEDS



Myers "Bulldozer" Pumps—more power, less weight, famous for dependability. An outstanding feature of Myers Power Sprayers.

New Tractor-Mounted Weed Sprayer—a low-cost, high-quality unit that is widely useful.

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THE F. E. MYERS & BRO. CO.
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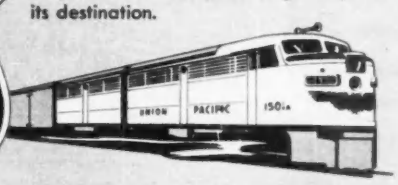
This is one phase of efficient operation whereby the way is cleared for your freight to proceed rapidly to its destination.

UNION PACIFIC RAILROAD



BE SPECIFIC: *Ship* UNION PACIFIC